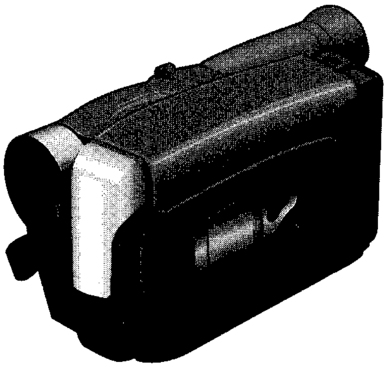
JVC

SERVICE MANUAL

COMPACT VHS CAMCORDER

GR-SZ5000EG/SZ7000EG



Super VHS

S-VHS-C VHS PAL 625

Hi-Fi STEREO

SPECIFICATION *(The specification shown pertain specifically to the model GR-SZ7000EG)*

GENERAL

Format : S-VHS/VHS PAL standard
Power source : DC 6 V ⎓
Power consumption
  Light on : 10.3 W
  Light off : 7.3 W
Signal system : PAL-type
Video recording system
  Luminance : FM recording
  Colour : Converted sub-carrier direct recording Conforms to S-VHS standard
Hi-Fi audio recording system : Deep-layer recording system conforming to stereo Hi-Fi VHS standard
No. of audio channels : 2 Hi-Fi audio channels 1 normal audio channel
Cassette : S-VHS/VHS-C cassette
Tape speed : 23.39 mm/sec
Recording time
  Max. : 60 minutes (with EC-60 cassette)
Operating temperature : 0°C to +40°C
Operating humidity : 35% to 80%
Storage temperature : –20°C to +50°C
Weight : Approx. 880 g
Dimensions : 112 (W) x 112 (H) x 232 (D) mm

CAMERA

Pick up : 1/4″ format CCD
Lens : F1.6, f = 3.8 to 68.4 mm, 18:1 power zoom lens with auto iris and macro control, filter diameter 46 mm
Viewfinder : Electronic viewfinder with 0.5″ B/W CRT
White balance adjustment : Auto/Manual adjustment

VIDEO

Output : 1 Vp-p, 75 ohms, unbalanced (via VIDEO out connector)

AUDIO

Output : –8 dBs, 1 k-ohm (via AUDIO out connector)
External microphone input : –68 dBs, high impedance,unbalanced with ø3.5 mm (STEREO)

AC POWER ADAPTER/BATTERY CHARGER (AA-V11EG)

Power requirement : AC 110 to 240 V∿, 50/60 Hz
Power consumption : 23 W
Output : DC 8.5 V ⎓, 1.3 A (CHARGE), DC 6.3 V ⎓, 1.8 A (VTR)
Charging system : Constant current, peak detection, timer controlled
Dimensions : 150 (W) x 42 (H) x 68 (D) mm
Weight : Approx. 350 g

CASSETTE ADAPTER (C-P7U)

Dimensions : 188 (W) x 25 (H) x 104 (D) mm
Weight : Approx. 240 g
Accessory : "R6 (AA)"-size battery x 1

Provided Accessories .... ☞ pg. 3

Optional Accessories

- **Battery Packs BN-V12U, BN-V22U, BN-V25U**
- **Car Battery Charger BH-V3E**
- **RF Unit RF-V5E**
- **S-VHS-C Cassettes SE-C45/30**
- **VHS-C Cassettes EC-60/45/30**
- **Active Carrying Bag CB-V7U**

Some acccessories are not available in some areas. Please consult your nearest JVC dealer for details on accessories and their availability.

E.&O.E.Design and specifications subject to change without notice.

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No. 86336
April 1997

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The following table lists the differing points between Models (GR-SZ5000EG and GR-SZ7000EG) in this series.

	GR-SZ5000EG	GR-SZ7000EG
SNAP SHOT		
PIN-UP MODE	×	○
MOTORDRIVE SHOT	×	○
MULTI 4,9	×	○
5 SECOND RECORDING	○	×
FADE/WIPE		
CORNER WIPE	×	○
DISSOLVE	×	○
AUTO SELECT	×	○
ZOOM	X36	X180
SLOW SHUTTER	×	○
CLASSIC FILM	×	○
STOROBO EFFECT	×	○
WIPE	×	○
SEPIA	○	×
FOG	○	×
ND EFFECT	○	×
1/1000S .Hi-S. SHUTTER	○	×
REMOTE CONTROL UNIT	RM-V704U or RM-V700U	RM-V706U or RM-V709U

NOTE: ○ USED × NOT USED
Mark ← is same as at left.

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

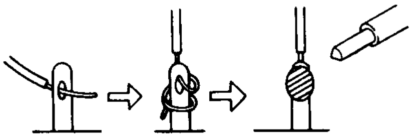


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

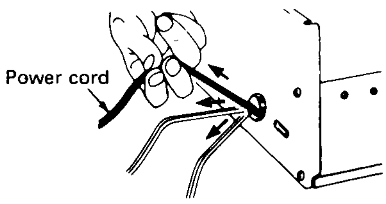


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

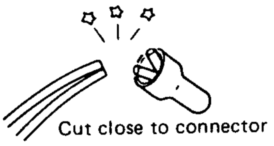


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

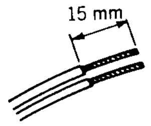


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

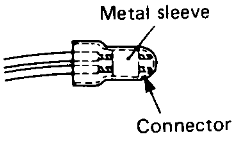


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

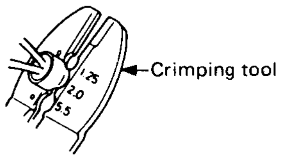


Fig. 6

(5) Check the four points noted in Fig. 7.

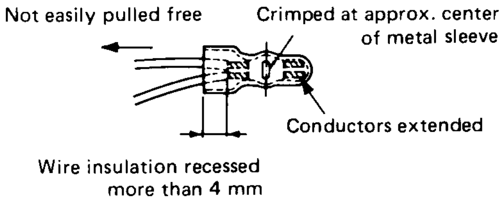

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

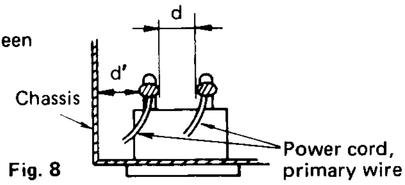


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method: (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

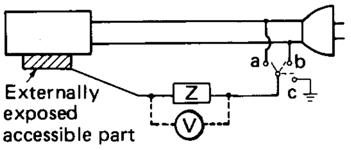


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

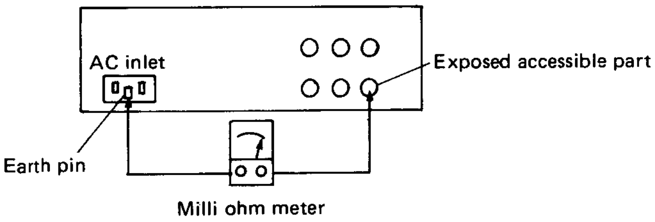


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	–	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

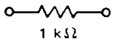
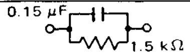
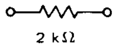
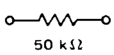
AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	 1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	 0.15 μF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	 2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		 50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS for GR-SZ7000EG

Dear Customer,
Thank you for purchasing the JVC Compact VHS camcorder. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of your new camcorder.

Using This Instruction Manual

- All major sections and subsections are listed in the Table Of Contents (☞ pg. 3).
- Notes appear after most subsections. Be sure to read these as well.
- Basic and advanced features/operation are separated for easier reference.

It is recommended that you . . .

..... refer to the Index (☞ pgs. 48 – 50) and familiarize yourself with button locations, etc. before use.

..... read thoroughly the Safety Precautions that follow and cautions (☞ pgs. 51, 52). They contain extremely important information regarding the safe use of your new camcorder.

SAFETY PRECAUTIONS

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTIONS:

- To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- When you are not using the AC Power Adapter/Battery charger for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

SVHSC 625 VHSC PAL

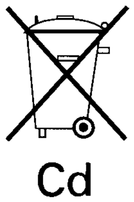
Cassettes marked "SVHSC" and "VHSC" can be used with this camcorder. However, S-VHS recordings are possible only with cassettes marked "SVHSC".

Warning on lithium battery

The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.
Replace battery with Panasonic (Matsushita Electric), Sanyo or Maxell CR2025; use of another battery may present a risk of fire or explosion.

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

Crossed Out Dust Bin Mark



- The Crossed Out Dust Bin Mark on the battery pack indicates that the product complies with Directives 91/157/EEC and 93/86/EEC.
- Nickel-Cadmium (Ni-Cd) battery pack must be recycled or disposed of properly.

This camcorder is designed to be used with PAL-type colour television signals. It cannot be used for playback with a television of a different standard. However, live recording is possible anywhere. Use the BN-V12U/V22U/V25U battery packs and, to recharge them, the provided multi-voltage AC Power Adapter/Charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

NOTES:

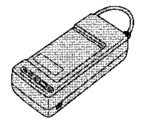
- *The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.*
- *The rating plate (serial number plate) of the AC Power Adapter/Charger is on its bottom.*

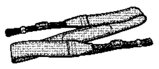
This unit is produced to comply with Standard IEC Publ. 65.

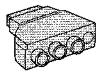
MAJOR FEATURES

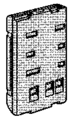
- **Program Manager (☞ pg. 16 – 29)**
- **Programme AE with Special Effects (☞ pgs. 16, 17)**
  - **Auto Mode Lock • Auto Mode Release**
  - **180X Digital Zoom • Strobe • Classic Film**
  - **Twilight • Sports • Slow Shutter**
  - **1/2000 sec. High Speed Shutter**
- **Picture Stabilizer (☞ pg. 20)**
- **Digital Hyper Zoom (☞ pg. 12)**
- **Digital Fades/Wipes (☞ pg. 22)**
- **EasyEdit with Random Assemble Editing (☞ pg. 38 – 41)**
- **Built-In Auto Light (☞ pg. 15)**
- **Snapshot (☞ pg. 14)**

PROVIDED ACCESSORIES

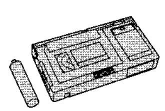

• AC Power Adapter/ Charger AA-V11EG

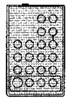

• Shoulder Strap

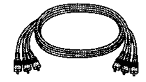

• Cable Adapter

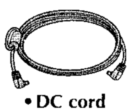

• Battery Pack BN-V12U

• Lithium Battery CR2025 x 2


• Cassette Adapter C-P7U


• Remote Control Unit RM-V706U or RM-V709U


• AUDIO/VIDEO (A/V) cable


• DC cord

• S-VIDEO cable

• Editing cable

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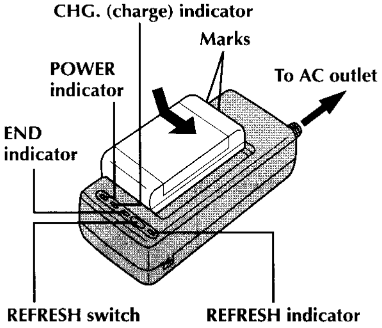
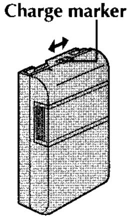
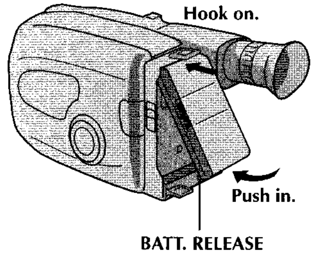




**** CHARGE MARKER**

A charge marker is provided on the battery pack to help you remember whether it has been charged or not. Two colors are provided (red and black)—you choose which one means charged and which means discharged.



ATTENTION:

Before detaching the power source, make sure that the camcorder's power is turned off. Failure to do so can result in a camcorder malfunction.

Power

This camcorder's 3-way power supply system lets you choose the most appropriate source of power.

NOTES:

- *No function is available without power supply.*
- *Use only specified power supply.*
- *Do not use provided power supply units with other equipment.*

CHARGING THE BATTERY PACK

1 SUPPLY POWER

Connect the charger's AC power cord to a wall outlet. The power indicator lights.

2 ATTACH BATTERY PACK

Align the marks and slide the battery pack in the direction of the arrow until it locks in place.
The CHG. indicator lights.

3 DETACH BATTERY PACK

When charging is completed, the END indicator lights. Slide the battery pack opposite the direction of the arrow.

BATT. PACK	CHARGE	DISCHARGE
BN-V12U	approx. 1 hr. 10 min.	approx. 3 hrs. 30 min.
BN-V22U	approx. 2 hrs. 10 min.	approx. 7 hrs.
BN-V25U	approx. 2 hrs. 40 min.	approx. 10 hrs.

USING THE BATTERY PACK

1 ATTACH BATTERY PACK

Hook its top end to the camcorder and push the battery pack in until it locks in place.

2 DETACH BATTERY PACK

Slide BATT. RELEASE and pull out the battery pack.

BATT. PACK	APPROXIMATE RECORDING TIME
BN-V12U	45 min. (30 min.)
BN-V22U	1 hr. 40 min. (1 hr. 10 min.)
BN-V25U	2 hrs. 5 min. (1 hr. 35 min.)

( ) : when the video light is on.

**** REFRESH**

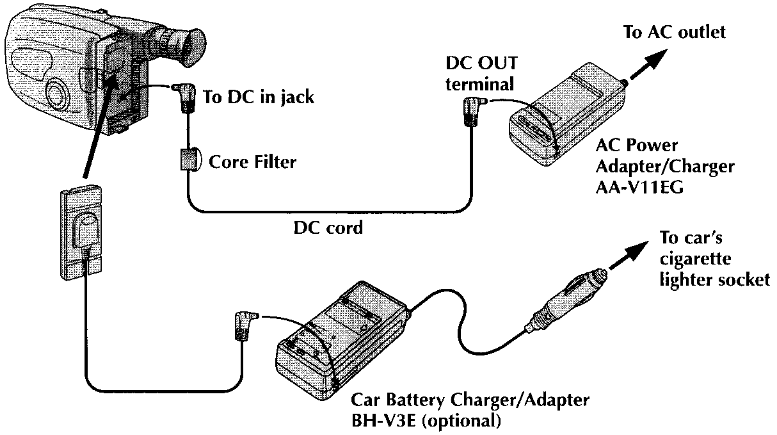
The AC power adapter features a REFRESH function that allows you to fully discharge the battery pack before recharging.

To discharge the battery . . .

..... attach the battery pack to the adapter as shown in the illustration to the left. Then push REFRESH. The REFRESH indicator lights when discharging starts, and goes out when discharging is complete.

NOTES:

- *The recording time per charge is affected by such factors as the time spent in Record/Standby mode and the frequency of zooming. It is safer to have spare battery packs.*
- *Charging times noted on page 4 are for fully discharged battey pack, and discharging times are for fully charged battery pack.*
- *Charging and discharging times vary according to the ambient temperature and the status of the battery pack.*
- *Remember to set the charge marker after charging a battery pack or after detaching a discharged one from your camcorder.*
- *Perform the REFRESH function after no less than 5 chargings.*
- *High temperatures can damage the battery pack, so use only where good ventilation is available. Don't allow it to discharge in container, such as a bag.*
- *If you stop recharging or discharging part way through, make sure to remove the battery pack before unplugging the adapter's AC cord.*
- *Remove the battery pack from the adapter immediately after discharging.*
- *To avoid interference with reception, do not use the AC Power Adapter/Charger near a radio.*
- *Make sure you unplug the DC cord before charging or discharging the battery pack.*
- *A blinking CHG. indicator means that the battery pack has become hot. Wait until it cools down to continue.*
- *The CHG. indicator may not light properly with a brand new battery pack, or with one that's been stored for an extended period. In this case, remove and reattach the battery pack and recharge it. The CHG. indicator should light during recharging. If not, contact your nearest JVC dealer.*


To AC outlet
DC OUT terminal
To DC in jack
Core Filter
AC Power Adapter/Charger AA-V11EG
DC cord
To car's cigarette lighter socket
Car Battery Charger/Adapter BH-V3E (optional)

USING A CAR BATTERY

Use the optional Car Battery Charger/Adapter (connect as shown in the above illustration).

NOTES:

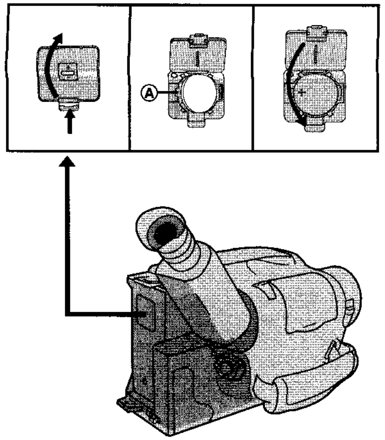
- *When using the car battery, leave the engine idling.*
- *The optional Car Battery Charger (BH-V3E) can also be used to charge the battery pack.*
- *When using the optional Car Battery Charger, refer to the respective instruction booklet.*

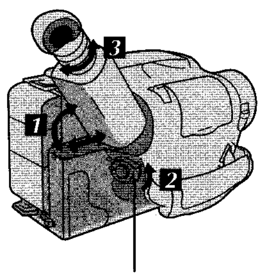
USING AC POWER

Use the AC Power Adapter (connect as shown in the above illustration).

NOTES:

- *The supplied AC Power Adapter/Charger features automatic voltage selection in the AC range from 110 V to 240 V.*
- *When using the provided DC cord, make sure you connect the end of the cable with the core filter to the camcorder. The core filter improves performance of equipment.*





Set POWER to "CAMERA".

Clock (Lithium) Battery Insertion/Removal

This battery is necessary for clock operation and to perform date/time settings.

1 SWITCH OFF POWER

Switch off the unit's power and remove the power supply unit.

2 OPEN COVER

Open the clock battery compartment cover while pressing the release tab.

3 REMOVE BATTERY (when replacing)

Insert a pointed, non-metallic object between the battery and the compartment (Ⓐ) and pull the battery out.

4 INSERT BATTERY

Ensuring the plus (+) side is up, insert a CR2025 lithium battery and push it in.

5 CLOSE COVER

Close the compartment cover until it clicks in place.

NOTE:

See "SAFETY PRECAUTIONS" (☞ pg. 2) for information on safe handling of lithium batteries.

Viewfinder Adjustment

1 POSITION VIEWFINDER

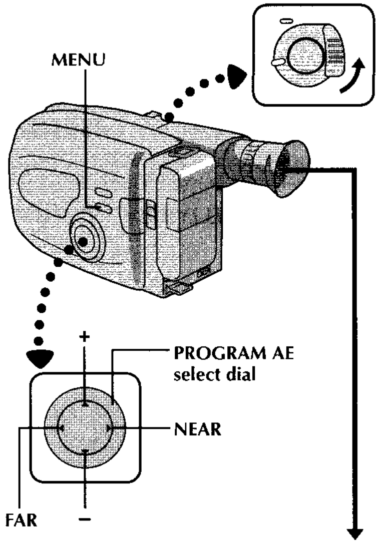
Adjust the viewfinder manually for best viewability (see illustration at left).

2 SELECT MODE

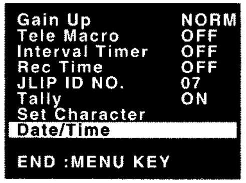
Set the power switch to CAMERA.

3 ADJUST DIOPTER

Turn the diopter adjustment control until the indications in the viewfinder are clearly focused.



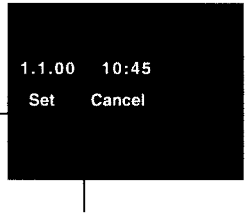
Menu screen



```
Gain Up            NORM
Tele Macro         OFF
Interval Timer     OFF
Rec Time           OFF
JLIP ID NO.        07
Tally              ON
Set Character
Date/Time

END :MENU KEY
```

Set time and date screen



```
1.1.00   10:45
 Set     Cancel
```

Date Day/Month/Year

Time 24-hour indication

Date/Time Setting

1 SELECT MODE

First set the power switch to "CAMERA". Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ACCESS MENU SCREEN

Press **MENU**.

3 SELECT FUNCTION

Press – to move the highlight bar down to "Date/Time", then press **NEAR**. The Set Date And Time screen appears.

4 SET DATE/TIME

Press **FAR** or **NEAR** until the item you want to set begins blinking, then press **+** or **–** to until the correct setting appears.

- If you decide you want to return the date and time to the previous settings, press **FAR** or **NEAR** to move the highlight bar to "Cancel", then press **MENU**.
- If you're satisfied with the settings, go on to step **5**.

5 START CLOCK OPERATION

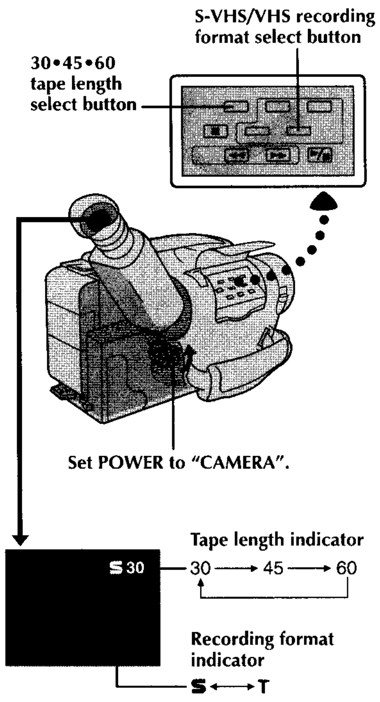
Once you've set the date and time, press **FAR** or **NEAR** until "Set" begins to blink, then press **MENU**. The Menu screen reappears.

6 CLOSE MENU

Press **MENU**.

NOTES:

- *To display the date and time in the viewfinder and on a connected TV, see "Date/Time Character Insert" (☞ pg. 26).*
- *If, in step **4**, you input an invalid date (30. 2, 31. 6, etc.) and perform step **5**, "Input Error" appears blinking at the bottom of the screen. Press +, –, **FAR** or **NEAR** to input the correct number.*


S-VHS/VHS recording format select button
30•45•60 tape length select button
Set POWER to "CAMERA".
Tape length indicator
S 30
30 → 45 → 60
Recording format indicator
S ↔ T

Tape Length Setting

Set the tape length according to the length of the tape used.

1 SET TAPE LENGTH

Press 30•45•60 until the required indication appears in the veiwfinder. 30 = 30 minutes of recording time, 45 = 45 minutes, and 60 = 60 minutes.

NOTE:

The tape remaining time (☞ pg. 11) displayed in the viewfinder is correct only if the correct tape length has been selected.

Recording Format Setting

When using an S-VHS-C cassette, set to either of the recording formats.

1 SET RECORDING FORMAT

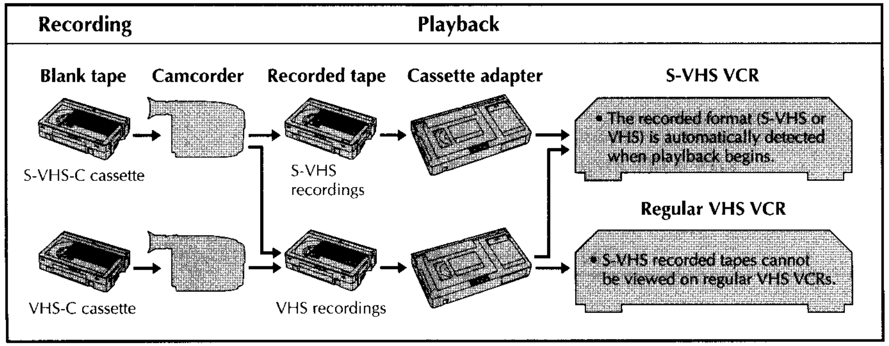
Press S-VHS/VHS button until the required indication appears in the viewfinder.

S : Super VHS
T : Regular VHS

NOTE:

Super VHS recordings cannot be made on VHS-C tapes.

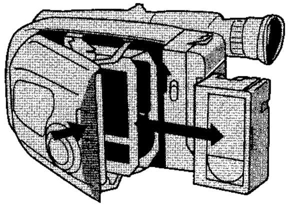
COMPATIBILITY BETWEEN S-VHS AND VHS

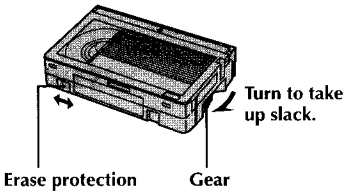

Recording
Playback
Blank tape
Camcorder
Recorded tape
Cassette adapter
S-VHS VCR
S-VHS-C cassette
S-VHS recordings
Regular VHS VCR
VHS-C cassette
VHS recordings

- The recorded format (S-VHS or VHS) is automatically detected when playback begins.
- S-VHS recorded tapes cannot be viewed on regular VHS VCRs.

Playback

The pictures recorded with the camcorder can be viewed in playback by directly connecting it to a TV; and *can also be played back using a VCR.*




Turn to take up slack.
Erase protection
Gear

Loading/Unloading A Cassette

1 OPEN CASSETTE HOLDER

Slide **EJECT** until the holder opens. Do not use force to open.

2 INSERT/REMOVE CASSETTE

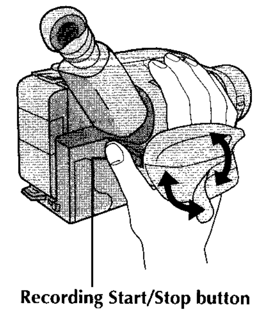
Make sure the label is facing outward.

3 CLOSE CASSETTE HOLDER

Press **PUSH** and make sure the holder is closed and locked.

NOTES:

- *A cassette holder can't be opened unless a power supply is attached.*
- *Make sure that the tape is not slack when loading the cassette. If there is any slack, turn the gear on the cassette in the direction of the arrow to take up the slack.*
- *Make sure the Erase Protection tab is in the position that allows recording. If not, slide the tab. Some cassettes have removable tabs. If the tab has been removed, cover the hole with adhesive tape.*
- *The cassette holder can't be opened while the camcorder is in the record mode.*



Grip Adjustment

1

EXPAND LOOP

Separate the Velcro strip.

2

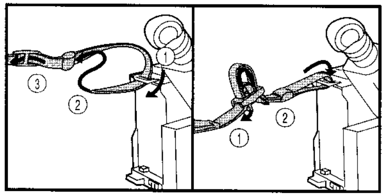
INSERT HAND

Pass your right hand through the loop and grasp the grip.

3

ADJUST STRAP LENGTH

Adjust so your thumb and fingers can easily operate the Recording Start/Stop button and Power Zoom lever. Refasten the Velcro strip.



Shoulder Strap Attachment

1

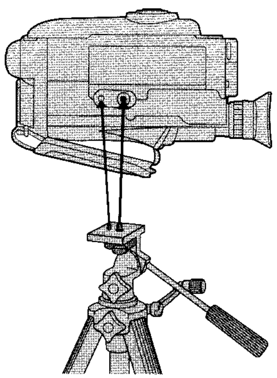
ATTACH STRAP

Following the illustration at left, thread the strap through the top of the eyelet ①, then fold it back and thread it through the keeper ②, and then through the buckle ③. Repeat the procedure to attach the other end of the strap to the other eyelet, making sure the strap isn't twisted.

2

ADJUST LENGTH

Adjust as shown in the illustration at left ①, then slide both keepers snug against the eyelets to prevent slipping ②.



Tripod Mounting

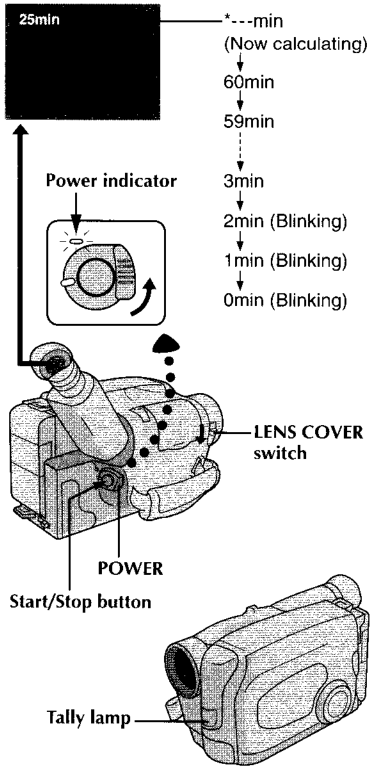
1

ALIGN AND TIGHTEN

Align the screw and camera direction stud on the tripod with the camera's mounting socket and stud hole. Then tighten the screw.

RECORDING Basic Recording

Tape remaining time indicator



NOTE:

You should already have performed the procedures listed below. If not, do so before continuing.

- *Power (☞ pg. 4)*
- *Date/Time Setting (☞ pg. 7)*
- *Tape Length Setting (☞ pg. 8)*
- *Recording Format Setting (☞ pg. 8)*
- *Grip Adjustment (☞ pg. 10)*

1

LOAD A CASSETTE

Slide EJECT to open the cassette holder, then insert the cassette with the label facing out. Press PUSH to ensure the holder is closed and locked.

2

ENTER RECORD–STANDBY MODE

Slide the LENS COVER open/close switch to open the lens cover, then set the power switch to "CAMERA".

- The power indicator lights and the camcorder enters the Record–Standby Mode.
- The scene you're aimed at appears on the viewfinder screen, with the word "PAUSE" superimposed upon it.

3

START SHOOTING

Press the **Start/Stop** button.

- The tally lamp lights while recording is in progress, and "REC ▶▶▶" appears in the viewfinder.

4

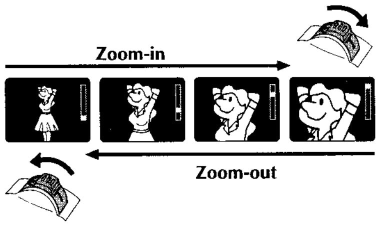
STOP RECORDING

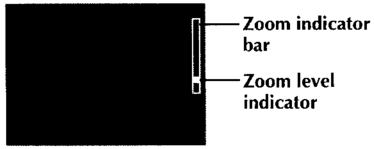
Press the **Start/Stop** button again to stop recording.

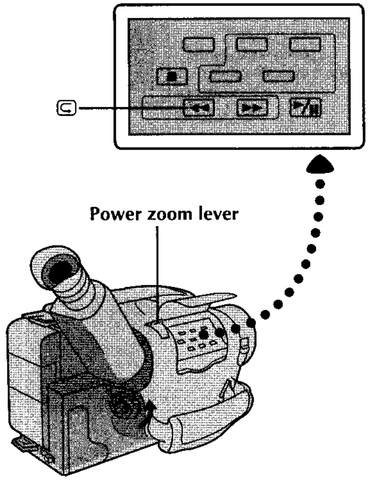
- The camcorder re-enters the Record-Standby mode.

NOTES:

- *A cassette holder can't be opened unless a power supply is attached.*
- *There may be a delay after you slide EJECT until the holder opens. Do not use force.*
- *The tape's remaining time is displayed in the viewfinder as shown.*
- *The indicated remaining time is approximate.*
- *The time required to calculate the remaining tape length, and the accuracy of the calculation, may vary according to the type of tape used.*
- *The tape remaining time displayed in the viewfinder is correct only if the correct tape length has been selected (☞ pg. 8).*
- *"TAPE END" appears when the tape reaches its end, and the power goes off automatically if left in this condition for 5 minutes. "TAPE END" also appears when a cassette whose tape is already at its end is loaded.*
- *If the Record–Standby mode continues for 5 minutes without performing Zoom or any other operations, the camcorder's power shuts off automatically. Set the Power switch to "POWER OFF", and then back to "CAMERA" to turn the camcorder on again.*
- *If the Recording Start/Stop button is pressed after the Record-Standby mode has continued for over 5 minutes, recording may not start immediately.*
- *If you're recording on a cassette from the middle, use the RETAKE function (☞ pg. 13) to find the end of the last recording so you don't erase any of it.*
- *The LENS COVER warning blinks for about 10 seconds when the camcorder is turned on, when the cover is closed.*

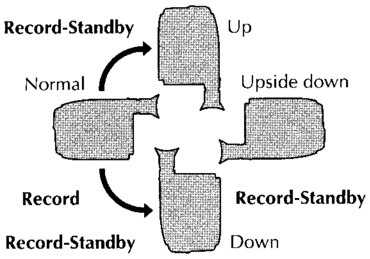


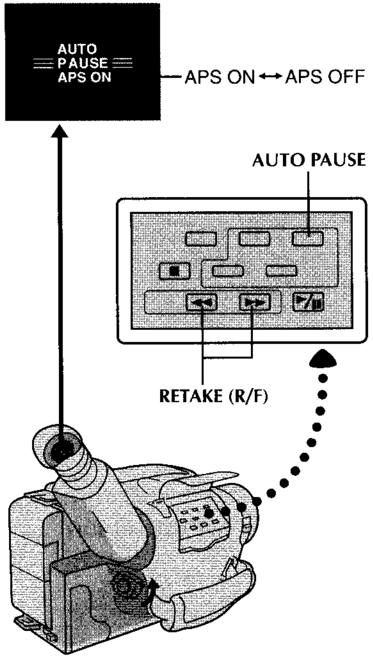




FEATURE:	**Zooming**
PURPOSE:	To produce the zoom in/out effect, or an instantaneous change in image magnification.
OPERATION:	**36X Hyper zoom** Digital circuitry doubles the maximum 18x magnification offered by optical zoom. **1)** To zoom in, slide the Zoom Lever toward "T". **2)** To zoom out, slide toward "W". **180X Hyper zoom** The maximum 180x zoom magnification is available through digital processing when Programme AE is set to 180x. (☞ pg. 17)
NOTES:	● *During Hyper Zoom, the speed increases the further you slide the Zoom Lever.* ● *Focusing may become unstable during Hyper Zoom. In this case, set the zoom while in Record–Standby, set manual focus or Focus Lock (☞ pg. 18, 19), then zoom in or out in Record mode.* ● *The Zoom Level Indicator (■) only moves during optical zoom. Once the Zoom Level indicator reaches the top of the zoom indicator bar, all magnification from that point is through digital processing.* ● *During digital image processing, the quality of the image may suffer.* ● *Snapshot (☞ pg. 14), Dissolve and Auto Select in Fade/Wipe (☞ pg. 23), do not function when Programme AE is set to 180x.*

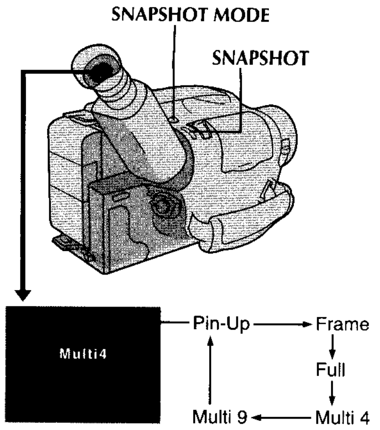
FEATURE:	**Quick Review**
PURPOSE:	To check the end of the last recording.
OPERATION:	1) Press "Ⓖ" and release quickly during the Record–Standby mode. • Tape is rewound for about 2 seconds and played back automatically, then pauses in Record–Standby mode for the next shot.
NOTE:	*Distortion may occur at start of playback. This is normal.*

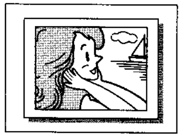




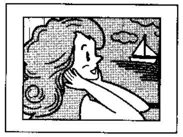
FEATURE:	**Retake**
PURPOSE:	To re-record certain segments.
OPERATION:	**1)** Make sure the camcorder is in the Record–Standby mode. **2)** Press either **RETAKE** button to reach the start point for new recording. Pressing "F" forwards the tape and pressing "R" reverses it. **3)** Press Recording Start/Stop to start recording.
NOTE:	*Noise may appear during Retake. This is normal.*

FEATURE:	**Auto Pause System**
PURPOSE:	To automatically stop recording when the camcorder is pointed down, preventing accidental recordings of the ground, your feet, etc.
OPERATION:	**1)** Press **AUTO PAUSE** so that "APS ON" appears in the viewfinder for 2 seconds. When the camcorder is tilted down by a large degree from its horizontal position during recording, the Record-Standby mode is automatically engaged. During this, "AUTO" is displayed above "═PAUSE═". • To switch off the Auto Pause System, press **AUTO PAUSE** again so that "APS OFF" appears in the viewfinder for 2 seconds.
NOTES:	● *The Auto Pause System is also effective when the camcorder is pointed up, or is positioned upside down.* ● *Auto Pause also works when the camcorder is twisted by a large degree to the left or right.* ● *When you want to shoot in any of the aforementioned positions, be sure to switch off Auto Pause.*

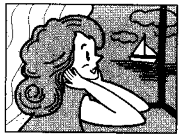




Pin-Up
A still image on a blue background. The image is bordered in white and a shadow effect is added to give it a more dimensional feel.

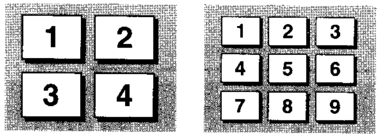


Frame
A still image with a white border is recorded.



Full
A still image that occupies the entire image field is recorded.

Multi-Analyzer 4/Multi-Analyzer 9



Record multiple images in one scene (4 or 9 at a time). The images appear and are stored in this order: 1, 2, 3, 4 (5, 6, 7, 8, 9 for Multi-Analyzer 9). In the Motor Drive mode, after "9", the next image recorded is "1", and the cycle is repeated.

Snapshot

This interesting feature lets you record several types of digital still images that look, and sound, like photographs. It's a great way to spice up footage of events such as parties, weddings and graduations.

1 SELECT SNAPSHOT MODE

Press **SNAPSHOT MODE** to cycle through the modes as shown in the illustration at left. Once the desired mode appears, it is selected and activated, and its indicator appears, within 2 seconds.

2 PERFORM SNAPSHOT RECORDING

Press **SNAPSHOT**.

If you press during recording . . .

.... a still image is displayed and recorded in the selected mode, then the camcorder resumes normal recording. In the Full and Frame modes, the new image comes in gradually overall. In the Pin-Up and Multi-Analyzer modes, the new image comes in gradually from the center.

If you press during Record–Standby . . .

.... a still image is displayed and recorded in the selected mode, then the camcorder re-enters the Record–Standby mode.

Motor Drive Function

1 SELECT SNAPSHOT MODE

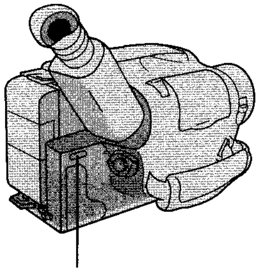
Select as in step **1** above.

2 ACTIVATE MOTOR DRIVE

During Snapshot recording, press and hold down **SNAPSHOT**. You can take rapid snapshots with an interval of approximately 0.7 seconds between stills.

NOTES:

- *The Date/Time and title display will disappear during Snapshot recording.*
- *The Motor Drive function cannot be activated using the **SNAPSHOT** button on the RM-V706U/V709U remote control unit (provided).*
- *When Multi-Analyzer is activated, the shutter sound may not match the appearance of the images.*
- *Snapshot recording does not function when programme AE is set to 180x (☞ pg. 17)*



LIGHT OFF/AUTO/ON

Video Light

When natural lighting is too dim, you can brighten the scene by using the built-in video light.

1 SET VIDEO LIGHT

Set the **LIGHT OFF/AUTO/ON** as required.

ON	: Always keeps the light on as long as the camcorder is turned on.
AUTO	: Automatically turns on the light when the camcorder senses insufficient lighting on the subject.
OFF	: Turns off the light.

- The video light can be used with the camcorder's power on.
- It is recommended to set the white balance (☞ pg. 27) to indoor mode (☀) when you use the video light.
- When not using the video light, turn it off to save battery power.

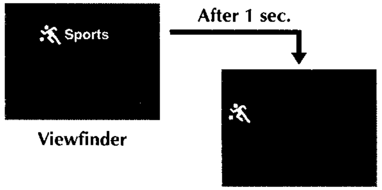
NOTES:

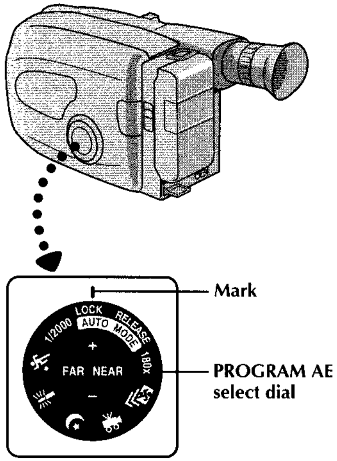
- *Even if the battery indicator (▭) does not blink in the viewfinder, if the battery pack's charge is low, the camcorder may turn off automatically when you turn on the video light, or when you start recording with the video light turned on.*
- *When the **LIGHT OFF/AUTO/ON** switch is set to "AUTO":*
  - *Depending on the lighting conditions, the video light may keep turning on and off. In this case, manually switch the light on or off using the **LIGHT OFF/AUTO/ON** switch.*
  - *While the Sports or High-Speed Shutter mode (☞ pg. 17) is engaged, the light is likely to stay on.*
  - *While the Twilight mode (☞ pg. 17) is engaged, the light will not activate.*

DANGER

- The video light become extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot.
- When operating, keep a distance of about 30 cm. between the video light and people or objects.
- Do not use near flammable or explosive materials.
- It is recommended that you consult your nearest JVC dealer for replacing the video light.

1 second later, the mode is activated.





Programme AE With Special Effects

All you have to do to access any of the variety of shooting effects is to turn the PROGRAM AE select dial.

1 SELECT MODE

Turn the PROGRAM AE select dial until the symbol of the function you want is aligned with the mark.

- The selected mode's name and its indication are displayed in the viewfinder for approx. 1 second. Then the name disappears, and only the indication remains. The mode is activated.
- When Auto Mode Lock or Auto Mode Release mode is selected, only the mode's name is displayed. Then the name disappears and the mode is activated.

NOTES:

- *Only one effect can be engaged at a time.*
- *The screen becomes slightly dark in the High Speed Shutter mode. Use in well-lighted situations.*
- *In the High Speed Shutter or Sports modes, picture colour may be adversely affected if subject is lit by alternating discharge-type light sources such as flourescent or mercury-vapour lights.*

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
LOCK	Auto Lock	Auto Mode Lock

Auto Mode Lock
Locks the camcorder in Full Auto mode, preventing incorrect operation due to accidental button pressing during shooting.

- In this mode the following controls are disabled; Fade/Wipe, Wide, Title, Display, M.W.B. (Manual White Balance), Manual Focus, Focus Lock, Exposure Control and MENU.

RELEASE	Auto Release	Auto Mode Release

Auto Mode Release
Re-enables the controls that were disabled by Auto Mode Lock.

180x	D.Zoom 180x	180x Digital Zoom

180X Digital Zoom
Boosts the maximum zoom magnification to approx. 180x.

- Snapshot (☞ pg. 14), Dissolve and Auto Select in Fade/Wipe (☞ pg. 23) do not function.

	Strobe	Strobe

Strobe
Freezes images in rapid succession.

	Classic Film	Classic Film

Classic Film
A strobe effect that gives the black and white picture a "flickery" effect like an old movie.

	Twilight	Twilight

Twilight
Dusk, twilight scenery, fireworks, etc., look more natural and dramatic. The following happens when Twilight mode is selected:

- Auto gain control is turned off.
- White Balance is set to "☀" (outdoor mode), but can also be manually changed to another mode (☞ pg. 27).
- Auto Focus becomes available only in the range of 10 m to infinity. To focus when the subject-to-camera distance is less than 10 m, use manual focusing (☞ pg. 19).

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
	Slow Shutter	Slow Shutter

Slow Shutter
Sets the shutter speed to 1/12.5 sec. and boosts the sensitivity so that the camcorder can record subjects even in virtual darkness.

- Use it only in dark locations.
- The picture flickers like a quick strobe.

	Sports	Sports

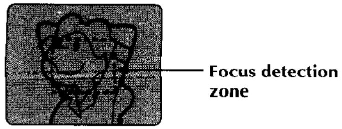
Sports
High shutter speed clearly captures fast-moving action.

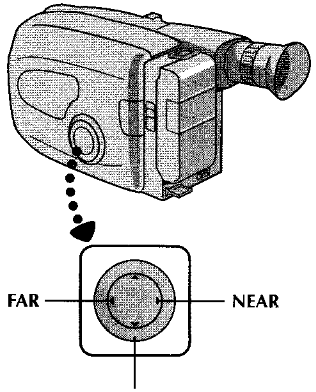
1/2000	2 S 1/2000	1/2000 sec. High Speed Shutter

High-Speed Shutter (1/2000s.)
Captures faster action than Sports mode.

NOTES:

- *When the Classic Film effects are activated, manual white balance adjustment (☞ pg. 27) is not possible.*
- *When Slow Shutter is activated, Auto Focus may not work properly.*
- *When Slow Shutter is activated, bright spots may appear on the screen. This is not a camcorder malfunction.*
- *Certain effects cannot be used together with other functions. When an effect not usable in the present situation is selected, its indicator blinks.*
- *Snapshot (☞ pg. 14), Dissolve and Auto Select in Fade/Wipe (☞ pg. 23) do not function when programme AE is set to 180x.*





PROGRAM AE select dial

Focusing

Auto Focus

The camcorder's Full Range AF system offers continuous shooting ability from close-up to infinity. However, correct focus may not be obtainable in the situations listed below (in these cases use manual focusing):

- When two subjects overlap in the same scene.
- When illumination is low.*
- When the subject has no contrast (difference in brightness and darkness), such as a flat, one-colour wall, or a clear, blue sky.*
- When a dark object is barely visible in the viewfinder.*
- When the scene contains minute patterns or identical patterns that are regularly repeated.
- When the scene is affected by sunbeams or light reflecting off the surface of a body of water.
- When shooting a scene with a high-contrast background.

* The low-contrast warning "⛰👤" appears in the viewfinder.

Focus Lock

This feature locks the focus in place, which is especially helpful in the following situations:

- When things pass between your subject and the camcorder. Engage the focus lock function to lock your subject in before recording.
- When you want your subject to be focused, and to appear in a corner of the screen. First, center on the subject and focus using auto focus mode. Then engage the focus lock function and move the camcorder until the subject is where you want it.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 LOCK FOCUS

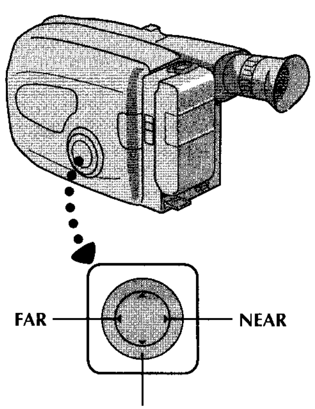
Press **FAR** or **NEAR**. The focus lock indication "⛰👤" appears in the viewfinder.

3 RELEASE FOCUS LOCK

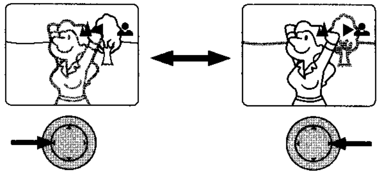
Press **FAR** and **NEAR** simultaneously. The focus lock indication disappears.

NOTES:

- *If the lens is smeared or blurred, accurate focusing is not possible. Keep the lens clean, wiping with a piece of soft cloth if it gets dirty. When condensation occurs, wipe with a soft cloth or wait for it to dry naturally.*
- *When shooting a subject close to the lens, zoom-out first (☞ pg. 12). If zoomed-in in the auto focus mode, the camcorder could automatically zoom out depending on the distance between the camcorder and the subject. *When Tele Macro (☞ pg. 29) is activated, the camcorder will not zoom out automatically.*



PROGRAM AE select dial



Manual Focus

NOTE:

You should already have made the necessary viewfinder adjustments (☞ pg. 6). If you haven't, do so before continuing.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ADJUST FOCUS

To farther subject . . .
Press and hold **FAR**. The Manual Focus indications "⛰◀ 👤" appear and "◀" blinks.
Go to step **3**.

To nearer subject . . .
Press and hold **NEAR**. The Manual Focus indications "⛰ ▶👤" appear and "▶" blinks.

Go to step **3**.

3 LOCK FOCUS

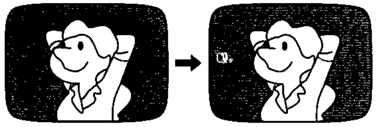
Release **FAR** or **NEAR**. The focus indication is replaced by the focus lock indication "⛰👤" and the adjusted focus is locked in.

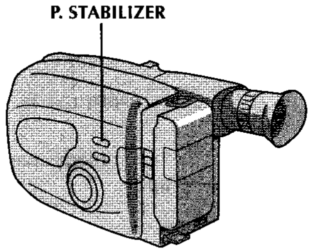
4 RELEASE MANUAL FOCUS MODE

Press **FAR** and **NEAR** simultaneously. The Manual Focus mode is immediately released and the focus lock indication disappears.

NOTES:

- *Be sure to focus the lens in the maximum telephoto position when you use the Manual Focus mode. If you focus in on a certain subject in the wide-angle position, sharply focused images cannot be obtained when zoomed up because the depth-of-field is reduced at longer focal lengths.*
- *When the focus level cannot be adjusted any farther or closer, "⛰" or "👤" will blink.*





Picture Stabilizer

This feature compensates for unstable images caused by camera-shake, particularly noticeable at high magnification.

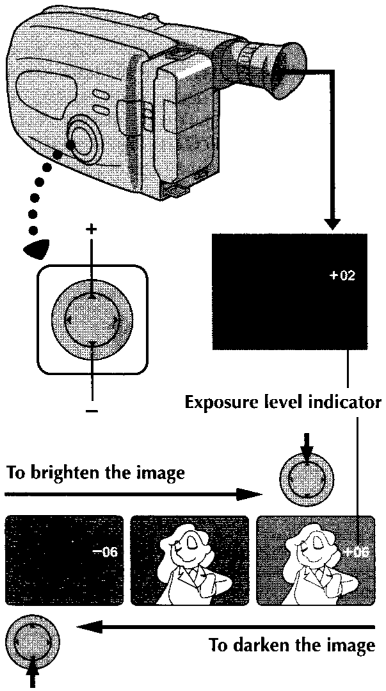
1 ACTIVATE PICTURE STABILIZER

Press **P.STABILIZER**. "📷" appears in the viewfinder.

- To switch off the Picture Stabilizer, press **P.STABILIZER**. The indicator disappears.

NOTES:

- *Accurate stabilization may not be possible if hand shake is excessive, or under the following conditions:*
  - *When shooting subjects with vertical or horizontal stripes*
  - *When shooting dark or dim subjects*
  - *When shooting subjects with excessive backlighting*
  - *When shooting scenes with movement in various directions*
  - *When shooting scenes with low-contrast backgrounds*
  - *When the Slow Shutter function is activated (☞ pg. 17), the Picture Stabilizer cannot be used. If you try to activate this function while Picture Stabilizer is engaged, "📷" blinks, telling you that Picture Stabilizer has been deactivated.*
- *Switch off Picture Stabilizer when recording with the camcorder on a tripod.*



Exposure Control

This feature automatically adjusts the iris for the best available picture quality, but you can override and make the adjustment manually.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 BRIGHTEN IMAGE

Press + (maximum +06). The Exposure level indicator appears in the viewfinder.

OR . . .

DARKEN IMAGE

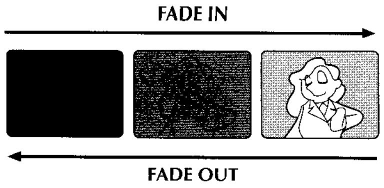
Press – (maximum –06). The Exposure level indicator appears in the viewfinder.

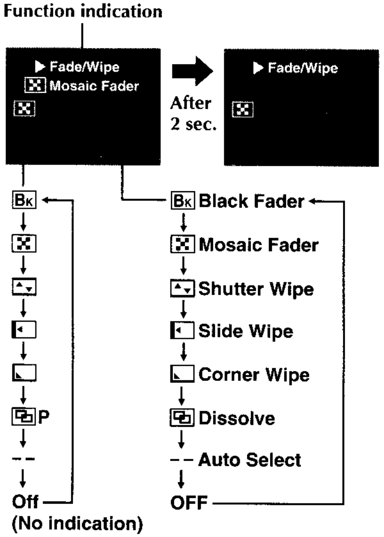
When you want to return to the factory setting . . .

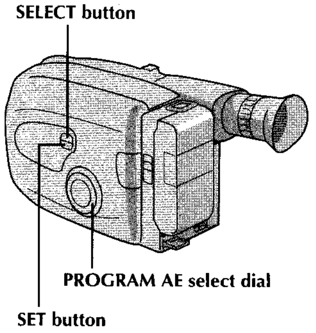
3 RESTORE INITIAL SETTING

Press + and – simultaneously. The standard setting is immediately restored and the Exposure level indicator disappears.

[Ex. : Black Fader]







Fade/Wipe

These effects let you make pro-style scene transitions. Fade- or wipe-in works at recording start, and fade- or wipe-out works at recording end or when you enter Record–Standby mode.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT FUNCTION

Press **SELECT** repeatedly until "▶**Fade/Wipe**" appears.

3 ENGAGE FADE- OR WIPE-STANDBY MODE

Press **SET** to cycle through the modes as shown at left. Once the desired mode appears, it is selected and reserved.

- The selected mode's name and its indication are displayed in the viewfinder for approx. 2 seconds. Then the name disappears, and only the indication remains.

4 START RECORDING

Press Recording Start/Stop to start recording and activate fade- or wipe-in.

OR . . .

END RECORDING

Press Recording Start/Stop to end recording and engage fade- or wipe-out.

5 TO CANCEL FADE- OR WIPE-STANDBY MODE

While "▶**Fade/Wipe**" is displayed, press **SET** twice.

- "OFF" is displayed for approx. 2 seconds and the reserved fade or wipe is cancelled.

NOTE:

Pressing and holding the Recording Start/Stop button allows you to record a black blank screen, a mosaic pattern if Mosaic Fader is selected or the stored scene if Dissolve or Auto Select is selected.

BK Black Fader
Fades in/out to a black screen.

Mosaic Fader
Gradually turns/returns the picture into/from a mosaic pattern.

Shutter Wipe
A black screen moves in from the top and bottom, closing over the image like a shutter, or a new image pushes open the black screen vertically from the centre. *During Auto Select mode, the new image wipes in over the old image, not a black screen.

Slide Wipe
A black screen moves in from the left to gradually cover the image, or a new image moves in from right to left. *During Auto Select mode, the new image wipes in over the old image, not a black screen.

Corner Wipe
A black screen starts in the lower left corner and gradually fills the screen, or a new image starts in the upper right corner and fills the black screen. *During Auto Select mode, the new image wipes in over the old image, not a black screen.

P Dissolve

1 Press the Recording Start/Stop button.
— Recording starts.
2 Press the Recording Start/Stop button again.
— Recording stops, and the Record–Standby mode is engaged.
— Now the last scene is stored in memory.

⬇ Before the power turns off...

3 Press the Recording Start/Stop button to resume recording.
— The stored scene is gradually replaced by the new scene being shot.

SCROLL WIPE (AUTO SELECT only)
A new image scrolls up onto the screen.

WINDOW WIPE (AUTO SELECT only)
A new image enters from the centre and moves towards the corners of the screen.

DOOR WIPE (AUTO SELECT only)
A new image opens like a door onto the screen.

– – Auto Select
Press the Recording Start/Stop button to begin or end recording, and 6 wipe-ins are automatically generated, in the order shown below:

SLIDE WIPE
↓
SCROLL WIPE
↓
CORNER WIPE
↓
WINDOW WIPE
↓
DOOR WIPE
↓
SHUTTER WIPE

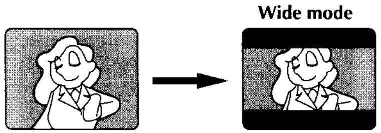
1 Press the Recording Start/Stop button.
— Recording starts.
2 Press the Recording Start/Stop button again.
— Recording stops and the Record-Standby mode is engaged.
— Now the last scene is stored in memory.

⬇ Before the power turns off...

3 Press the Recording Start/Stop button to resume recording.
— The new scene gradually wipes in over the stored scene.
— Repeat steps **2** and **3** as you like.

NOTES (for Dissolve and Auto Select):

- *Turning off the camcorder will erase the scene stored in memory. When a scene is erased from memory, the symbol indication blinks.*
- *The sound for the last recording's scene is not stored in memory.*
- *This mode indicator blinks unless an image is stored in memory. In this case, shoot a scene first.*



Wide

This feature allows you to record black bars at the top and bottom of the screen to produce a cinema-like "wide-screen" effect.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT FUNCTION

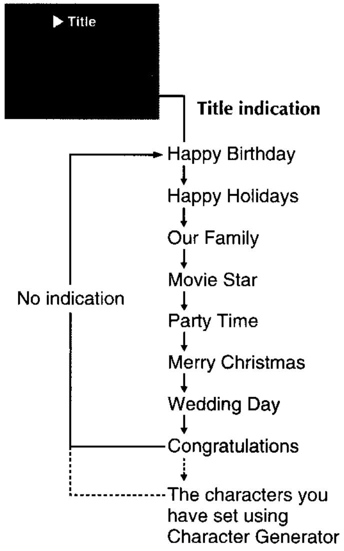
Press **SELECT** repeatedly until "**▶Wide**" appears.

3 ENGAGE WIDE MODE

Press **SET**.

4 RESTORE NORMAL SCREEN

Press **SET** again while "**▶Wide**" appears.



Instant Titles

The camcorder has eight preset titles in memory. You can superimpose one of them above a previously stored title as shown in the illustration to the left.

DISPLAY

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT FUNCTION

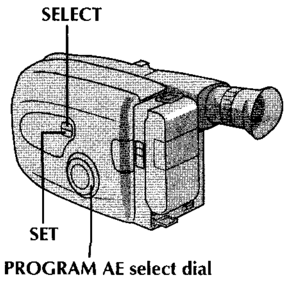
Press **SELECT** repeatedly until "**▶Title**" appears.

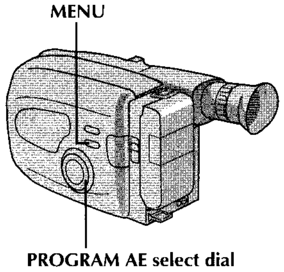
3 SELECT PRESET TITLE

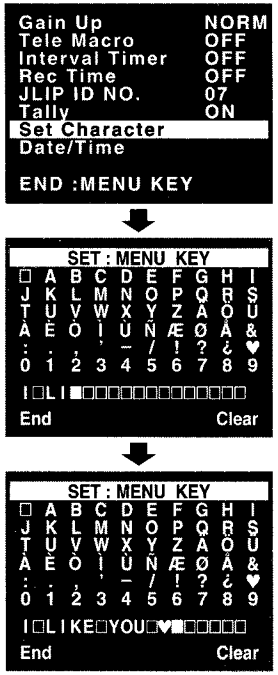
Engage the Record-Standby mode, then press **SET** to cycle through the preset titles until the desired title is displayed.

NOTES:

- *To delete the Instant Titles during recording, press **SELECT** repeatedly until "**▶Title**" appears then press **SET**.*
- *To recall a title, press **SET** again.*







```
Gain Up          NORM
Tele Macro       OFF
Interval Timer   OFF
Rec Time         OFF
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```

```
      SET : MENU  KEY
□  A  B  C  D  E  F  G  H  I
J  K  L  M  N  O  P  Q  R  S
T  U  V  W  X  Y  Z  Ä  Ö  Ü
À  È  Ò  Ì  Ù  Ñ  Æ  Ø  Å  &
:  .  ,  '  —  /  !  ?  ¿  ♥
0  1  2  3  4  5  6  7  8  9

I□LI■□□□□□□□□□□□□□
End                    Clear
```

```
      SET : MENU  KEY
□  A  B  C  D  E  F  G  H  I
J  K  L  M  N  O  P  Q  R  S
T  U  V  W  X  Y  Z  Ä  Ö  Ü
À  È  Ò  Ì  Ù  Ñ  Æ  Ø  Å  &
:  .  ,  '  —  /  !  ?  ¿  ♥
0  1  2  3  4  5  6  7  8  9

I□LIKE□YOU□♥■□□□□□□
End                    Clear
```

Character Generator

You can enter an original title of up to 18 characters.

1 ACCESS MENU SCREEN

Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 ACCESS CHARACTER SET MENU

Press + or – to move the highlight bar to "Set Character", then press **NEAR**. The Character Set menu appears.

3 INPUT CHARACTERS

Press +, –, **FAR** or **NEAR** to make the desired character blink, then press **MENU**. The selected characters appear at the bottom of the screen. Repeat as many times as desired (max. 18).

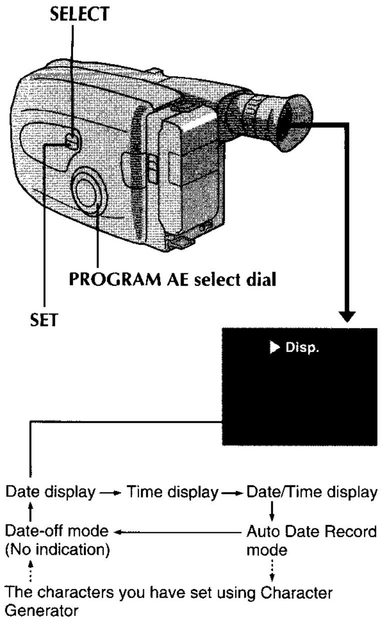
- To select the location of the next character, press +, –, **FAR** or **NEAR** to make the row of squares blink at the bottom of the screen, then press **FAR** or **NEAR** to move the blinking cursor underneath the desired location. Press + when you're done, and the blinking cursor returns to the character grid.

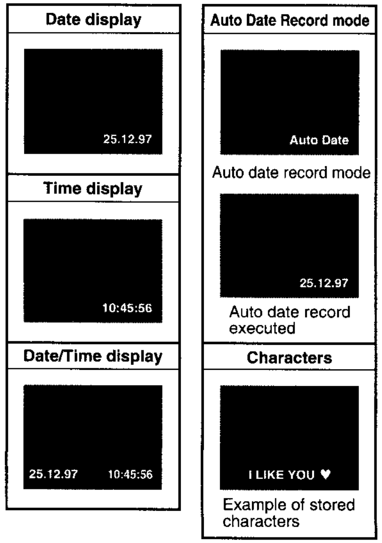
4 END CHARACTER SETTING

Press +, –, **FAR** or **NEAR** to make "End" blink, then press **MENU** twice to return to the normal screen.

NOTES:

- *To erase a character you entered mistakenly, make "Clear" blink by pressing +, –, **FAR** or **NEAR**, then press **MENU**. All characters are deleted at once. Or, to erase selected characters only, first move the blinking cursor to the character at the bottom row which you want to replace, then press +, **FAR** or **NEAR** to highlight "□" in the top left corner, and then press **MENU**.*
- *To display the characters you have set — "Instant Titles" (☞ pg. 24) or "Date/Time/Character Insert" (☞ pg. 26).*
- *Characters may be set only in the Record-Standby mode.*


SELECT
PROGRAM AE select dial
SET
▶ Disp.
Date display → Time display → Date/Time display
Auto Date Record mode
Date-off mode
(No indication)
The characters you have set using Character Generator


Date display
25.12.97
Time display
10:45:56
Date/Time display
25.12.97 10:45:56
Auto Date Record mode
Auto Date
Auto date record mode
25.12.97
Auto date record executed
Characters
I LIKE YOU ♥
Example of stored characters

Date/Time Character Insert

This feature allows you to display date, time and characters in your viewfinder and on a connected color monitor, record them manually or automatically, and even make your own titles.

NOTE:

You should already have performed the Date/Time Setting procedure (☞ pg. 7). If you haven't, do so before continuing.

DISPLAY

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT DISPLAY

Press **SELECT** repeatedly until "**▶Disp.**" appears.

3 CHOOSE DISPLAY MODE

Press **SET** while in Record–Standby to cycle through the modes as shown in the illustration at left.

NOTES:

- *The selected display can be recorded.*
- *If you don't want to record the display, select Date-off mode before shooting.*
- *If you want to delete the display during shooting, press **SELECT** repeatedly until "**▶Disp.**" appears then press **SET**.*
- *To recall the display, press **SET** again.*

AUTO DATE RECORD

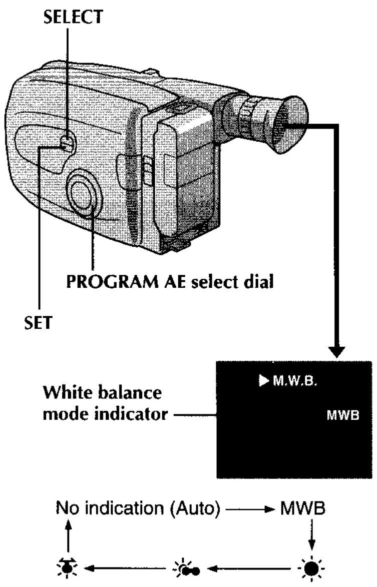
Your camcorder automatically records the date for about 5 seconds after recording is initiated in the following situations:

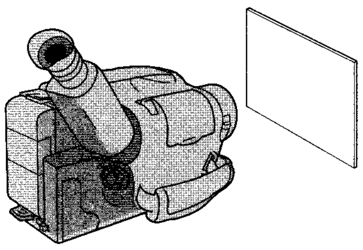
- After changing the date.
- After loading a cassette.
- After Auto Date Record mode is selected by pressing **SET**.

In this mode, the date is replaced after 5 seconds with "Auto Date".

NOTES:

- *Setting **PROGRAM AE** to LOCK always engages the Auto Date Record mode, and disables all other modes.*
- *In the Auto Date Record mode, if the date changes while you're shooting, the date indication is recorded for about 5 seconds from that point. It is not recorded during any other recordings made on that day.*


SELECT
PROGRAM AE select dial
SET
White balance mode indicator
▶M.W.B.
MWB
No indication (Auto) → MWB



Manual White Balance Adjustment (M.W.B.)

This camcorder's Automatic Colour Temperature system senses the colour temperature of the ambient lighting for automatic white balance adjustment. However, precise colour adjustment is not possible under the following conditions:

- When an object is in various shades of the same colour.
- When a predominantly red or brown object is being shot outdoors.

In these cases, use the camcorder's built-in preset filters for white balance adjustment.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT FUNCTION

Press **SELECT** reapeatedly until "**▶M.W.B.**" appears.

3 SELECT WHITE BALANCE

Press **SET** (Manual White Balance) until the required indication appears in the viewfinder.

"MWB" ..... With a memorized personal White Balance setting (see below)
"☀" .... Outdoors on sunny day
"⛅" .... Outdoors on cloudy day
"✹" .... Light source is halogen or tungsten lamp

MWB

MWB sets the colour temperature for the subject's light source so you can shoot with natural colours that are unaffected by surroundings, even when there are multiple subjects with different colour temperatures.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ADJUST FOCUS

Point the camcorder at a white, flat object such as a sheet of white paper, and adjust focus manually (☞ pg. 19).

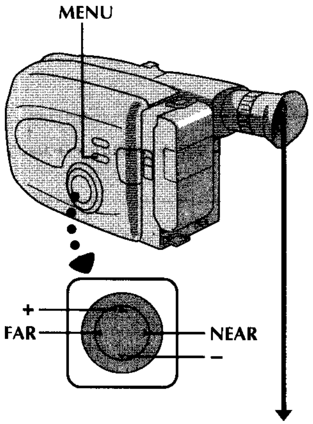
3 ADJUST WHITE BALANCE

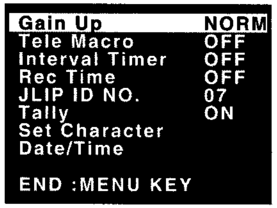
Press **SET** until "MWB" appears, then press and hold **SET** for more than 3 seconds.

- "MWB" blinks in the viewfinder during adjustment, then stops blinking but stays lit when adjustment is complete.

NOTES:

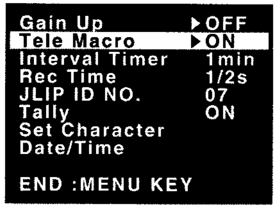
- *To switch to automatic white balance adjustment, press **SET** until the indication disappears, or turn the PROGRAM AE select dial to "AUTO LOCK".*
- *Re-adjust the White Balance when the lighting has changed, when the camcorder has been turned off and on again, or when the PROGRAM AE select dial's position has been changed.*
- *It is helpful to connect your camcorder to a colour monitor when adjusting the white balance ("Basic Connections" ☞ pg. 30).*
- *When adjusted by putting coloured paper in front of the subject in step **2** ("ADJUST FOCUS"), this unit makes its colour temperature standard for automatic white balance. So you can enjoy shooting with different colours. For example, when adjusting with red, blue or yellow colours, the image becomes the colour which aproximates to green, orange or purple respectively.*





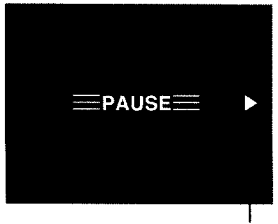
```
Gain Up          NORM
Tele Macro       OFF
Interval Timer   OFF
Rec Time         OFF
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```



```
Gain Up         ▶OFF
Tele Macro      ▶ON
Interval Timer   1min
Rec Time         1/2s
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```



If "Gain Up" or "Tele Macro" in the Menu has been changed from the factory settings, this mark appears in the viewfinder.

Using Menu For Detailed Adjustment

This camcorder is equipped with Program Manager, an easy-to-use, on-screen menu system that simplifies many of the more detailed camcorder settings.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ACCESS MENU SCREEN

Press **MENU**.

3 SELECT FUNCTION

Press **+** or **–** to place the highlight bar on the desired function.

4 MAKE SETTING

The setting procedure depends on the function you select.

If you select Gain Up, Tele Macro, Interval Timer, Rec Time, JLIP ID NO. or Tally. . . .

.... press **FAR** or **NEAR** to cycle through the choices until the desired setting appears.

If you select Set Character or Date/Time, . . .

.... press **NEAR** to access the selection menu for each function (Set Character – ☞ pg. 25; Date/Time – ☞ pg. 7).

5 CLOSE MENU

Press **MENU**. The normal screen reappears.

NOTE:

The menu is available only in the Record-Standby mode.

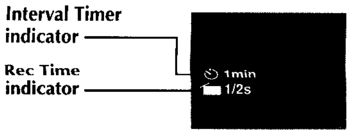
MENU

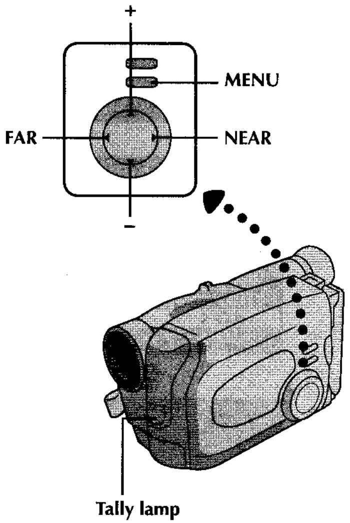
Gain Up	**NORM**	To record a subject in a dimly lit environment. When it is more convenient to shoot with a less coarse picture although the subject becomes slightly dark.
	▶ OFF	Allows you to shoot dark scenes with no picture brightness adjustment.
Tele Macro	**OFF**	Usually set to this position.
	▶ ON	Usually the distance to a subject where the lens is in focus depends on the zoom magnification. Unless there is a distance more than 1m to the subject, the lens is out of focus at the maximum telephoto setting. When set to "ON", you can shoot a subject as large as possible at a distance of approx. 60 cm. • Depending on the zoom position, the lens may go out of focus.
Interval Timer	**OFF** **15s** **30s** **1min** **5min**	This feature allows you to set the parameters for Self-Timer (☞ pg. 30) and Time-Lapse recording (☞ pg. 31).
Rec Time	**OFF** **1/4s** **1/2s** **1s** **5s**	This feature allows you to set the parameters for Animation and Time-Lapse recording (☞ pg. 31).
JLIP ID NO.	This number is necessary when connecting the camcorder to a device such as a computer using the J terminal (JLIP). (☞ pg. 49) The numbers range from 01 to 99. Factory setting is 07.	
Tally	**ON**	The tally lamp comes on to signal the start of rcording.
	OFF	The tally lamp remains off at all times.
Set Character	Allows you to input characters. (☞ pg. 25).	
Date/Time	Allows you to set the current date and time (☞ pg. 7).	

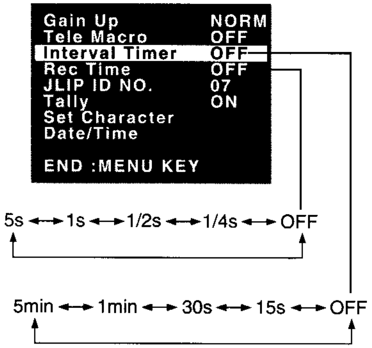
▨ = Factory setting and when the PROGRAM AE Select Dial is set to AUTO LOCK

NOTE:

During shooting in low light, Auto Focus accuracy may decrease even when Gain Up is used. In this case, use Manual Focus (☞ pg. 19).







Gain Up NORM
Tele Macro OFF
Interval Timer OFF
Rec Time OFF
JLIP ID NO. 07
Tally ON
Set Character
Date/Time
END :MENU KEY

Self-Timer

You can set the delay between pressing **Recording Start/Stop** and the actual start of recording. If you secure the camcorder, you (or whomever is operating the camcorder) can enter the scene before recording starts.

NOTE:

Make sure the camcorder is in the Record-Standby mode before performing the following steps.

1 ACCESS MENU SCREEN

Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 SET INTERVAL TIME

Press – or + to move the highlight bar down to "**Interval Timer**", then press **FAR** or **NEAR** to cycle through the choices. Stop when the desired time appears. Choose from "15s", "30s", "1min", "5min", or select to turn the function "OFF".

3 CLOSE MENU

Press **MENU**.

4 START DELAYED RECORDING

Press **Recording Start/Stop**. The tally lamp begins blinking, and the blinking frequency increases about 5 seconds before recording is to start. Once recording begins, the lamp stops blinking but stays lit.

To Release Self-Timer . . .

..... while the tally lamp is blinking, press **Recording Start/Stop** to stop the blinking, then set "**Interval Timer**" to "OFF".

Animation

Give stationary scenes or objects an illusion of movement. This function allows you to shoot a series of pictures, each slightly different, of the same object for a brief period of time.

NOTE:

Make sure the camcorder is in the Record-Standby mode before performing the following steps.

1 ACCESS MENU SCREEN

Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 SET RECORDING TIME

Press – or + to move the highlight bar down to "**Rec Time**", then press **FAR** or **NEAR** to cycle through the choices. Stop when the desired time appears. Choose from "1/4s", "1/2s", "1s", "5s", or select to turn the function "OFF". Then press **MENU** to close Menu screen.

3 START RECORDING

Press the Recording Start/Stop button after focusing on the subject. The recording stops automatically after the selected period of time.

4 ASSEMBLE SERIES OF PICTURES

Repeat step **3** for the desired number of pictures.

5 RELEASE ANIMATION MODE

Set "**Rec Time**" in the Menu screen to "OFF".

NOTES:

- *For best results, make sure the camcorder is secured when shooting in Animation or Time-Lapse mode.*
- *Fade/Wipe-in/out cannot be performed during Animation or Time-Lapse shooting.*
- *Before performing other operations following Animation or Time-Lapse recording, make sure the Animation or Time-Lapse mode is deactivated.*

Time-Lapse

You can record sequentially at preset time spans. Leaving the camcorder aimed at a specific subject, you can record subtle changes over an extended period of time.

NOTE:

Make sure the camcorder is in the Record-Standby mode before performing the following steps.

1 ACCESS MENU SCREEN

Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 SET INTERVAL BETWEEN RECORDINGS

Press – or + to move the highlight bar down to "**Interval Timer**", then press **FAR** or **NEAR** to cycle through the choices. Stop when the desired time appears. Choose from "15s", "30s", "1min", "5min", or select to turn the function "OFF".

3 SET RECORDING TIME

Press – or + to move the highlight bar down to "**Rec Time**", then press **FAR** or **NEAR** to cycle through the choices. Stop when the desired time appears. Choose from "1/4s", "1/2s", "1s", "5s", or select to turn the function "OFF". Then press **MENU** to close Menu screen.

4 START TIME-LAPSE RECORDING

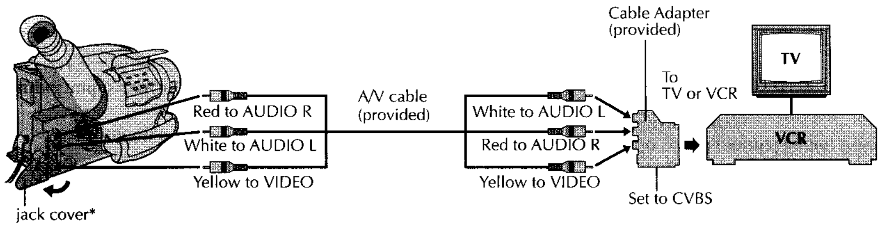
Press the Recording Start/Stop button. Recording and intervals alternate automatically.

5 RELEASE TIME-LAPSE MODE

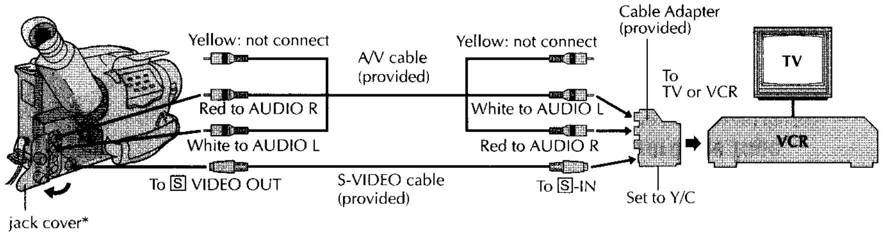
To release when the tally lamp is not blinking, set "**Rec Time**" and "**Interval Timer**" in the Menu screen to "OFF". To release when the tally lamp is blinking, press the Recording Start/Stop button to stop the blinking, then set "**Interval Timer**" and "**Rec Time**" in the Menu screen to "OFF".

These are some basic types of connections. When making the connections, refer also to your VCR and TV instruction manuals.

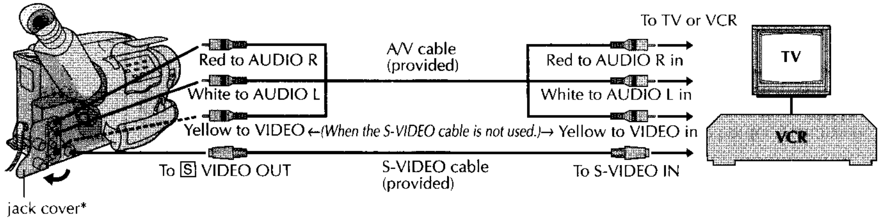
A. Connection To a TV or VCR equipped with a SCART connector compatible only with regular video signal


Cable Adapter (provided)
TV
To TV or VCR
Red to AUDIO R
White to AUDIO L
Yellow to VIDEO
A/V cable (provided)
White to AUDIO L
Red to AUDIO R
Yellow to VIDEO
VCR
Set to CVBS
jack cover*

B. Connection To a TV or VCR equipped with a SCART connector compatible with Y/C signal


Yellow: not connect
A/V cable (provided)
Yellow: not connect
Cable Adapter (provided)
TV
To TV or VCR
Red to AUDIO R
White to AUDIO L
White to AUDIO L
Red to AUDIO R
VCR
To S VIDEO OUT
S-VIDEO cable (provided)
To S-IN
Set to Y/C
jack cover*

C. Connection To a TV or VCR equipped with an S-VIDEO IN and/or A/V input (RCA type) connectors


To TV or VCR
Red to AUDIO R
A/V cable (provided)
Red to AUDIO R in
TV
White to AUDIO L
White to AUDIO L in
Yellow to VIDEO ←(When the S-VIDEO cable is not used.)→ Yellow to VIDEO in
VCR
To S VIDEO OUT
S-VIDEO cable (provided)
To S-VIDEO IN
jack cover*

*jack cover: When connecting the cables, open the jack cover.

A: Connection to a TV or VCR equipped with a SCART connector compatible only with regular video signals

NOTE:

Use the provided A/V cable and cable adapter.

1 CONNECT CAMCORDER TO TV/VCR

As shown in the illustration at left, connect the A/V cable to the AUDIO and VIDEO connectors on the camcorder and to those on the cable adapter, and then connect the cable adpter to the SCART connector on the VCR or TV.

2 SET "Y/C"/"CVBS" SWITCH

Set the "Y/C"/"CVBS" video out select switch on the cable adapter to "CVBS".

3 SUPPLY POWER

Turn on the camcorder, VCR and TV.

4 SELECT MODE

Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

B: Connection to a TV or VCR equipped with a SCART connector compatible with Y/C signals

NOTE:

Use the Provided S-VIDEO cable, A/V cable and cable adapter.

1 CONNECT CAMCORDER TO TV/VCR

As shown in the illustration at left, connect the S-VIDEO cable and the A/V cable to the S-VIDEO and AUDIO connectors on the camcorder and to those on the cable adapter, and then connect the cable adapter to the SCART connector on the VCR or TV.

2 SET "Y/C"/"CVBS" SWITCH

Set the "Y/C"/"CVBS" video out select switch on the cable adapter to "Y/C".

3 SUPPLY POWER

Turn on the camcorder, VCR and TV.

4 SELECT MODE

Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

C: Connection to a TV or VCR equipped with an S-VIDEO IN and/or A/V input (RCA type) connectors

NOTE:

Use the provided A/V cable and S-VIDEO cable.

1 CONNECT CAMCORDER TO TV/VCR

As shown in the illustration at left, connect the S-VIDEO cable and/or the A/V cable to the S-VIDEO (or the VIDEO) and AUDIO connectors on the camcorder and to those on the VCR or TV.

2 SUPPLY POWER

Turn on the camcorder, VCR and TV.

3 SELECT MODE

Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

D: Connection to a TV with NO A/V Input Connectors (Playback ONLY)

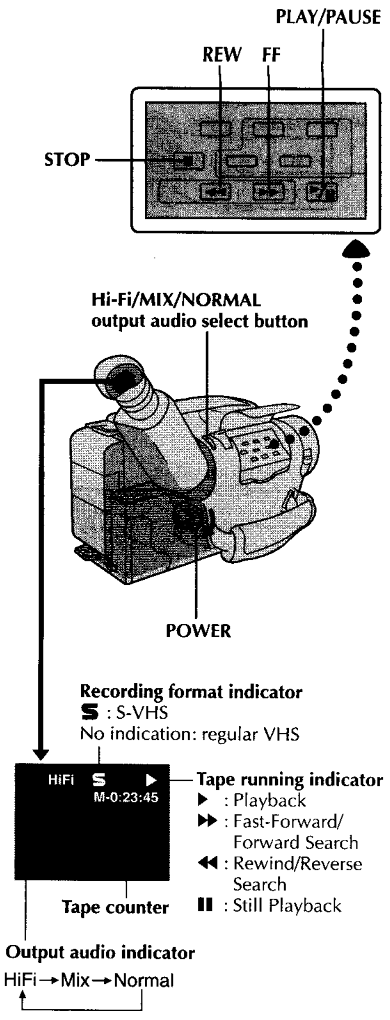
NOTE:

Use the optional RF-V5E RF unit.
Connect it to the camcorder's VIDEO, AUDIO L and RF DC OUT connectors.

* Refer to the RF-V5E instruction manual for the connection procedure.

NOTES:

- *It is recommended to use the AC Power Adapter/Charger as the power supply instead of the battery pack.*
- *To monitor the picture and sound from the camcorder without inserting a tape, set the camcorder's Power switch to "CAMERA", then set your TV to the appropriate input mode.*
- *If you have a TV or speakers that are not specially shielded, do not place the speakers adjacent to the TV as interference will occur in the camcorder playback picture.*


PLAY/PAUSE
REW
FF
STOP
Hi-Fi/MIX/NORMAL output audio select button
POWER
Recording format indicator
S : S-VHS
No indication: regular VHS
HiFi S ▶
M-0:23:45
Tape running indicator
▶ : Playback
▶▶ : Fast-Forward/ Forward Search
◀◀ : Rewind/Reverse Search
❚❚ : Still Playback
Tape counter
Output audio indicator
HiFi→Mix→Normal

NOTE:

Make sure you connect your camcorder as directed in "Basic Connections" (☞ pg. 32).

1 LOAD A CASSETTE

Slide **EJECT** to open the cassette holder, then insert the cassette with the label facing out. Press **PUSH** to ensure the holder is closed and locked.

2 SELECT MODE

Set the Power switch to "PLAY". The Power On indicator lights.

3 PLAYBACK

Press **PLAY/PAUSE**. The playback picture appears in the viewfinder and the connected TV.

4 STOP PLAYBACK

Press **STOP**.

Rewind or Fast-forward the tape

Press **REW** to rewind, or **FF** to fast-forward the tape during Stop mode.

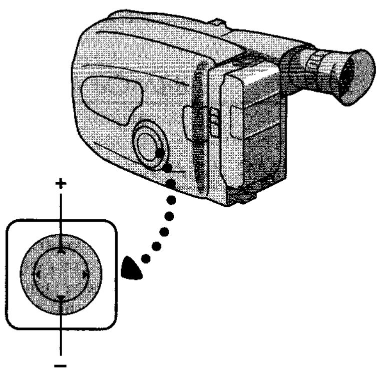
NOTE:

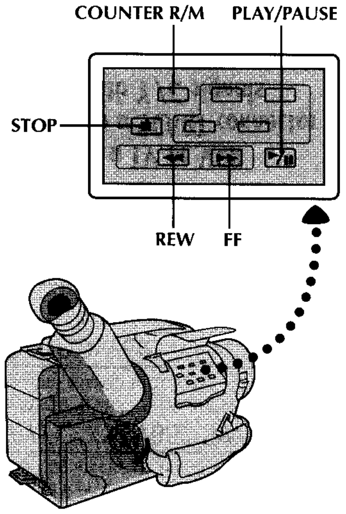
The camcorder shuts off automatically after about 5 minutes in Stop mode or Still Playback mode. To turn on again, set the Power switch to "POWER OFF", then to "PLAY".

Select the Audio Playback Soundtrack

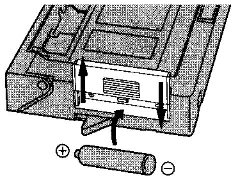
Press the Hi-Fi/MIX/NORMAL audio output select button so that the required indication appears in the viewfinder.

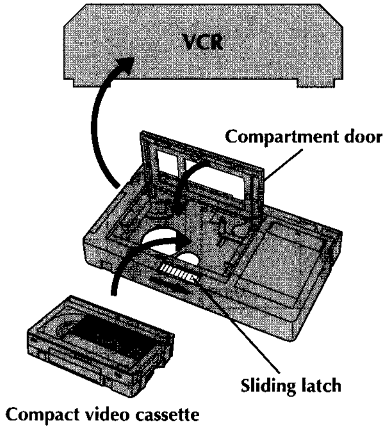
- HiFi : Outputs Hi-Fi stereo sound from the AUDIO OUT connectors. Use this setting for normal use.
- Mix : Outputs both Hi-Fi stereo sound and longitudinal audio sound (normal audio) from the AUDIO OUT connectors.
- Normal : Outputs only longitudinal audio sound (normal audio) from the AUDIO OUT connectors.



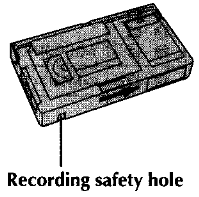

COUNTER R/M
PLAY/PAUSE
STOP
REW
FF

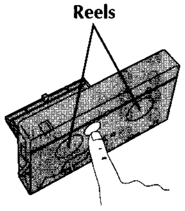
FEATURE:	**Manual Tracking**
PURPOSE:	To eliminate noise bars that appear on the screen during playback.
OPERATION:	**1)** Press either **+/–** button as many times as necessary for best picture.
NOTES:	● *To reset TRACKING to the original preset, press both + and – buttons simultaneously.* ● *Manual Tracking may not work with tapes recorded on other VCRs or camcorders.*
FEATURE:	**Still Playback**
PURPOSE:	To pause during playback.
OPERATION:	**1)** Press **PLAY/PAUSE** during playback. **2)** To resume normal playback, press **PLAY/PAUSE** again.
NOTE:	*Noise bars appear and pictures may become monochrome during Still Playback. This is normal.*
FEATURE:	**Shuttle Search**
PURPOSE:	To allow high-speed search in either direction.
OPERATION:	***Forward Search*** **1)** Press **FF** during playback. ***Reverse Search*** **1)** Press **REW** during playback.
NOTE:	*Noise bars appear and pictures may become monochrome or darken in Shuttle Search. This is normal.*
FEATURE:	**Counter Memory Function**
PURPOSE:	To make it easier to locate a specific tape segment.
OPERATION:	**1)** Press **COUNTER R/M** and hold for more than 2 seconds. The counter resets to "0:00:00". **2)** Press **COUNTER R/M**. "M" appears. **3)** After recording or playback, press **STOP**, then **REW**. The tape automatically stops at or close to 0:00:00. **4)** Press **PLAY/PAUSE** to start playback.
NOTES:	● *The counter memory functions in the FF and REW modes.* ● *To disable Counter Memory Function, press **COUNTER R/M** so the "M" disappears.*




VCR
Compartment door
Sliding latch

Compact video cassette


Recording safety hole



Cassette Adapter

Use this to play back a VHS-C/S-VHS-C video cassette recorded with this camcorder. It is fully compatible with any S-VHS/VHS video cassette recorder. The C-P7U adapter is battery powered and automatically performs tape loading and unloading.

1 INSERT BATTERY

Slide the battery cover up to remove it, and install one "R6(AA)" size battery as shown in the illustration at left. Then reattach the cover.

2 INSERT CASSETTE IN ADAPTER

Slide the latch to open the adapter compartment door, then insert the cassette and close the compartment door.

3 PLAY BACK ON CONNECTED VCR

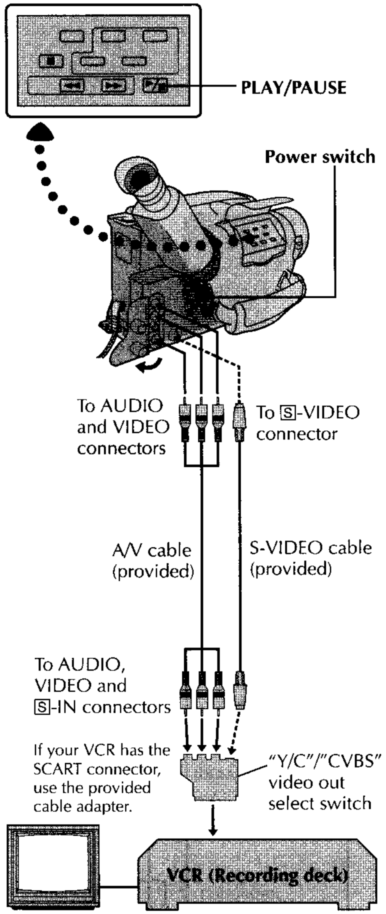
Load the cassette adapter into the VCR and play the tape back as you would any other.

4 REMOVE CASSETTE FROM ADAPTER

Slide the latch and the compartment door opens automatically. Then insert your finger in the hole on the underside of the adapter as shown in the illustration at left, push up and remove the cassette.

NOTES:

- *During tape loading and unloading, do not touch the reels for safety and tape protection.*
- *Tapes recorded in S-VHS cannot be played back on regular VHS VCRs.*
- *During special-effect playback (slow motion, still frame, etc.), the picture may vibrate or noise bars may appear on the screen.*
- *To record on a VCR using a compact cassette and the adapter, cover the adapter's recording safety hole with adhesive tape.*


PLAY/PAUSE
Power switch
To AUDIO and VIDEO connectors
To S-VIDEO connector
A/V cable (provided)
S-VIDEO cable (provided)
To AUDIO, VIDEO and S-IN connectors
If your VCR has the SCART connector, use the provided cable adapter.
"Y/C"/"CVBS" video out select switch
VCR (Recording deck)

Tape Dubbing

1 CONNECT EQUIPMENT

Following the illustration at left, connect the camcorder and the VCR. (refer also to page 32 and 33)

2 PREPARE FOR DUBBING

Set the camcorder's Power switch to "PLAY", turn on the VCR's power, and insert the appropriate cassettes in the camcorder and the VCR.

3 SELECT VCR MODE

Engage the VCR's AUX and Record-Pause modes.

4 FIND EDIT-IN POINT

Engage the camcorder's Play mode to find a spot just before the edit-in point. Once it's reached, press **PAUSE** on the camcorder.

5 START EDITING

Press **PLAY** on the camcorder and engage the VCR's Record mode.

6 STOP EDITING TEMPORARILY

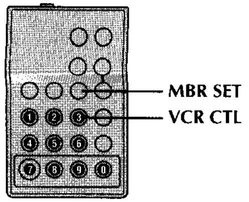
Engage the VCR's Record-Pause mode and press **PAUSE** on the camcorder.

7 EDIT MORE SEGMENTS

Repeat steps **4** through **6** for additional editing, then stop the VCR and camcorder when finished.

NOTES:

- *If your VCR has an S-VIDEO input connector or a SCART connector compatible with Y/C signals, connect the camcorder and the VCR using the provided S-VIDEO cable. This can improve the dubbed picture quality.*
- *If you use the provided cable adapter, set the "Y/C"/"CVBS" video out select switch as required.*
  Y/C : When connecting to a VCR which accepts Y/C signals and uses an S-VIDEO cable.
  CVBS : When connecting to a VCR which does not accept Y/C signals and uses an audio/video cable.


MBR SET
VCR CTL

RM-V706U or RM-V709U (provided)

VCR CODE LIST

VCR BRAND NAME	BUTTONS (A)	(B)
AKAI	❻	❷
	❻	❹
	❼	❼
BLAUPUNKT	❶	❸
FERGUSON	❾	❼
	❾	❽
	❸	❷
GRUNDIG	❶	❹
	❸	❹
HITACHI	❻	❻
	❻	❸
JVC A	❾	❶
B	❾	❻
C	❾	❸
MITSUBISHI	❻	❼
	❻	❽
NEC	❸	❼
	❸	❽
PANASONIC	❶	❸
	❶	❼
	❶	❶
	❾	❹
	❶	❽
PHILIPS	❶	❾
	❾	❺
	❶	❶
	❾	❹
	❾	❶
	❾	❻
	❶	❷
	❸	❸
SANYO	❸	❻
	❸	❺
SELECO, REX	❾	❶
	❾	❻
SHARP	❶	❺
	❶	⓿
SONY	❻	❺
	❻	⓿
	❸	❾
	❸	❶
THOMSON, TELEFUNKEN, SABA, NORDMENDE	❾	❶
	❾	❻
	❾	❼
	❸	❷
TOSHIBA	❻	❾
	❻	❶

Random Assemble Editing [R.A. Edit]

Create edited videos easily using your camcorder as the source player. You can select up to 8 "cuts" for automatic editing, in any order you like. R.A. Edit is more easily performed when the MBR (Multi-Brand Remote RM-V706U or RM-V709U) is set to operate with your brand of VCR (see VCR CODE LIST), but can also be performed by operating the VCR manually.

SET REMOTE/VCR CODE

1 SET REMOTE TO OPERATE VCR

Turn off the power to the VCR and point the remote toward the VCR's infrared sensor. Then, referring to the VCR CODE LIST on the left, press and hold **MBR SET**, and press button (A) and then (B).

- The code is automatically set once you release the **MBR SET** button, and the VCR's power comes on.

2 OPERATE THE VCR

Make sure the VCR's power is on. Then, while holding **VCR CTL**, press the button on the remote for the desired function. The functions the remote can control are PLAY, STOP, PAUSE, FF, REW and VCR REC STBY (you don't need to press **VCR CTL** for this one).

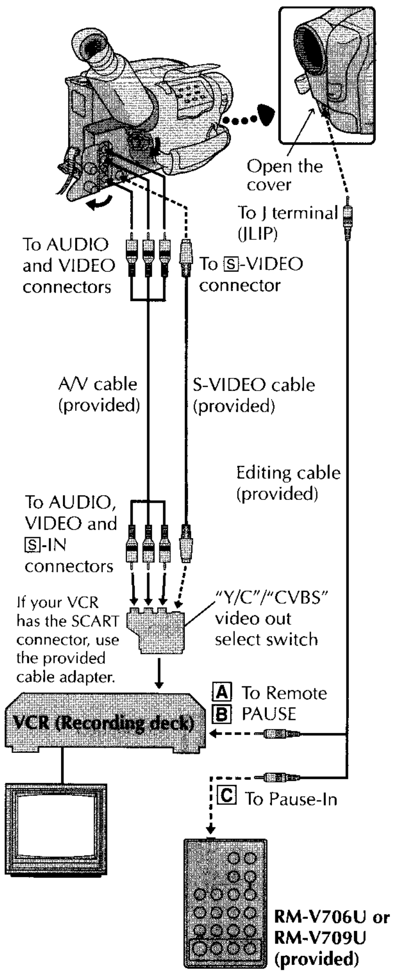
You're now ready to try Random Assemble Editing.

IMPORTANT

Although the MBR is compatible with JVC VCRs and those of many other makers, it may not work with yours or may offer limited functions.

NOTES:

- *If the VCR's power doesn't come on in step **1**, try another code from the VCR CODE LIST.*
- *Some brands of VCR don't come on automatically. In this case, turn the power on manually and try step **2**.*
- *If the RM-V706U/V709U is not able to control the VCR, use the controls on the VCR.*


Open the cover
To J terminal (JLIP)
To AUDIO and VIDEO connectors
To S-VIDEO connector
A/V cable (provided)
S-VIDEO cable (provided)
Editing cable (provided)
To AUDIO, VIDEO and S-IN connectors
If your VCR has the SCART connector, use the provided cable adapter.
"Y/C"/"CVBS" video out select switch
VCR (Recording deck)
A To Remote
B PAUSE
C To Pause-In
RM-V706U or RM-V709U (provided)

MAKE CONNECTIONS

1 CONNECT TO . . .

A **JVC VCR EQUIPPED WITH REMOTE PAUSE TERMINAL**
Connect the editing cable to the Remote PAUSE terminal.

B **JVC VCR NOT EQUIPPED WITH REMOTE PAUSE TERMINAL.**
Connect the editing cable to the R.A. EDIT connector.

C **NON-JVC VCR WITH NEITHER**
Connect the editing cable to the RM-V706U/V709U's Pause-In jack.

2 PREPARE CAMCORDER

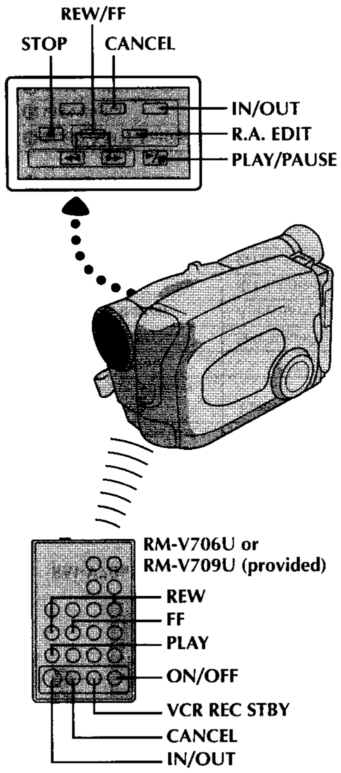
Insert a recorded tape and set the Power switch to "PLAY".

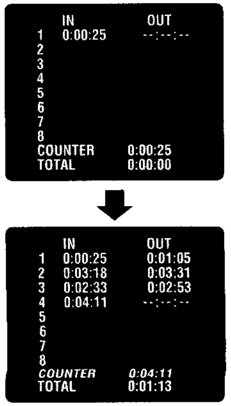
3 PREPARE VCR

Turn the power on, insert a recordable tape and engage the AUX mode (refer to VCR's instructions).

NOTES:

- *If your VCR has an S-VIDEO input connector or a SCART connector compatible with Y/C signals, connect the camcorder and the VCR using the provided S-VIDEO cable. This can improve the dubbed picture quality.*
- *If you use the provided cable adapter, set the "Y/C"/"CVBS" video out select switch as required.*
  - *Y/C : When connecting to a VCR which accepts Y/C signals and uses an S-VIDEO cable.*
  - *CVBS : When connecting to a VCR which does not accept Y/C signals and uses an audio/video cable.*





```
     IN          OUT
1    0:00:25     --:--:--
2
3
4
5
6
7
8
COUNTER      0:00:25
TOTAL        0:00:00
```

```
     IN          OUT
1    0:00:25     0:01:05
2    0:03:18     0:03:31
3    0:02:33     0:02:53
4    0:04:11     --:--:--
5
6
7
8
COUNTER      0:04:11
TOTAL        0:01:13
```

SELECT SCENES

1 ACCESS R.A. EDIT COUNTER DISPLAY

Press **PLAY/PAUSE**, then press **R.A. EDIT** and the counter display appears in the viewfinder and the screen of the connected TV.

2 REGISTER BEGINNING OF SCENE

Press **REW** or **FF** to locate the beginning of the scene you want, then press **IN/OUT** to register that point. The data appears under IN on the display.

3 REGISTER END OF SCENE

Press **REW** or **FF** to locate the end of the scene and press **IN/OUT** to register it. The data appears under OUT on the display. The total time of the registered scene(s) is displayed at the bottom of the screen.

4 REGISTER ADDITIONAL SCENES

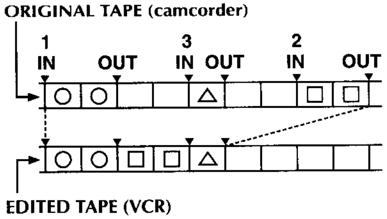
Repeat steps **2** and **3** for each additional scene (as many as 8).

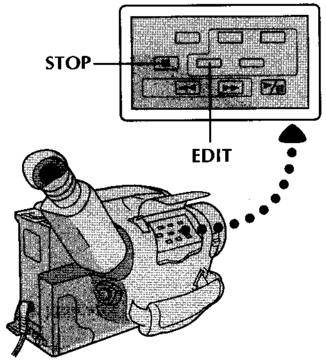
5 MAKE CORRECTIONS

Press **CANCEL** during steps **2** and **3** to erase the most recently registered point.

NOTES:

- *The RM-V706U/V709U can be used to operate other camcorder functions as well. Point the RM-V706U/V709U at the camcorder's remote sensor and press any of the following buttons (function appears in parentheses):*
  - *— ON/OFF (camcorder R.A. EDIT)*
  - *— IN/OUT (camcorder IN/OUT)*
  - *— CANCEL (camcorder CANCEL)*
- *There must be at least one second between an in-point and its corresponding out-point.*
- *To ensure correct operation, leave at least 15 seconds open between scenes.*
- *Blank portions of tape cannot be registered as in-points or out-points.*
- *If it takes more than 5 minutes to search for an in-point, the VCR's Record-Pause mode is cancelled and editing doesn't take place.*
- *Pressing **R.A. EDIT** clears all in- and out-points from memory.*
- *Leave a small margin for error around each in-point to ensure the scene is recorded in its entirety.*





AUTOMATIC EDITING TO VCR

1 ENGAGE VCR'S RECORD–PAUSE MODE

Point the remote control toward the VCR's infrared sensor and press **VCR REC STBY**, or manually engage the VCR's Record-Pause mode.

2 BEGIN AUTOMATIC EDITING

Press **EDIT** on the camcorder, and the previously selected scenes are copied to the VCR in the specified order.

3 END AUTOMATIC EDITING

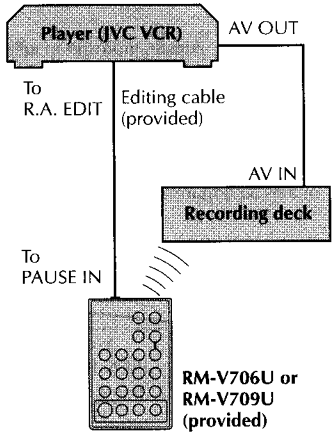
When all selected scenes have been copied, the camcorder and VCR enter the still or pause mode. Press **STOP** on both units.

- When finished editing, be sure to disconnect the editing cable and the audio/video cable.

NOTES:

- *If you performed step 1C on page 39 ("MAKE CONNECTIONS"), keep the remote control pointed at the VCR during editing.*
- *The on-screen display only appears while the camcorder searches for each scene.*
- *There may be noise at in- or out-points on the edited tape with certain VCRs.*

SUPPLEMENTAL INFORMATION ON THE REMOTE CONTROL



Using the RM-V706U/V709U, it is also possible to perform deck-to-deck Random Assemble Editing. The playback deck must be an R.A. Edit-capable JVC VCR. The recording deck can be...

- ■ a VCR other than JVC, or
- ■ a JVC VCR which has **neither** a Remote PAUSE nor an R.A. EDIT connector

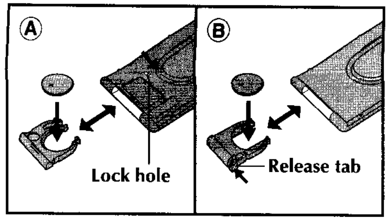
How to use:

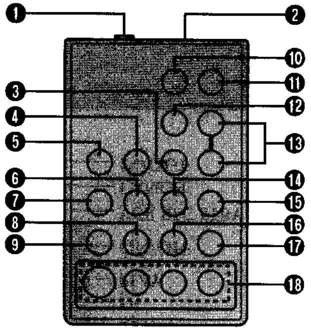
- — Connect the playback deck and RM-V706U/V709U as shown on the left.
- — Set the RM-V706U/V709U to correspond to the brand of the recording deck. (☞ pg. 38)
- — For Random Assemble Editing procedure, please refer to the instruction manual of the JVC VCR you are using as the playback deck.

Notes:

- ■ RM-V706U/V709U cannot be used to control the playback deck.
- ■ RM-V706U/V709U is capable of controling basic operations of the recording deck. While pressing VCR CTL, press PLAY, STOP, PAUSE, FF or REW for these functions. (Not possible with some brands and models). Other buttons cannot be used.
- ■ To put the recording deck in the Record-Pause mode, use the controls on the recording deck itself.

USING REMOTE CONTROL UNIT





RM-V706U or RM-V709U (provided)

The Full-Function Remote Control Unit can operate this camcorder from a distance as well as the basic operations (PLAY, STOP, PAUSE, FF, and REW) of your VCR. This remote control unit makes additional recording functions possible.

Installing The Battery

1 PULL OUT BATTERY HOLDER

Pull out the battery holder according to the type of remote control unit you have.

Type Ⓐ : Pull out the battrery holder while sliding the lock hole.

Type Ⓑ : Pinch the release tab and pull out the battery holder.

2 INSERT BATTERY

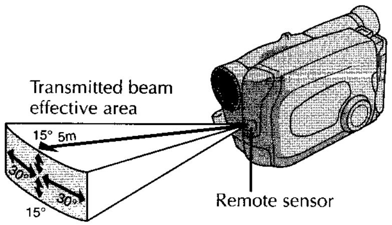
Making sure the plus (+) side is up, insert the lithium battery (CR2025)* into the battery holder.

3 REPLACE BATTERY HOLDER

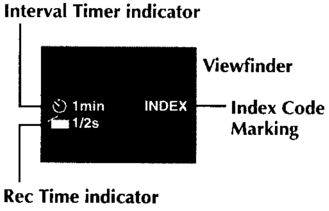
Insert the battery holder into the remote control unit, and push the holder until it clicks into place.

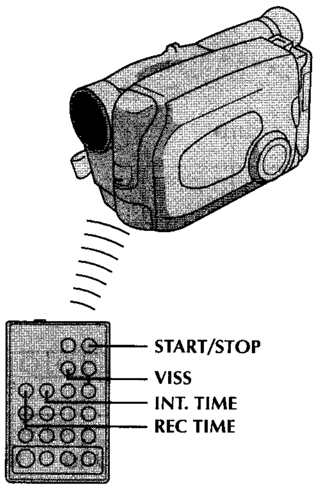
* Read the caution concerning lithium batteries (☞ pg. 2).

BUTTONS	FUNCTIONS	
	With the camcorder's power switch set to "CAMERA".	With the camcorder's power switch set to "PLAY".
❶ **PAUSE IN Connector**	—	☞ pg. 39
❷ **Infrared beam transmitting window**	Transmits the beam signal.	
❸ **MBR SET Button**	—	☞ pg. 38
❹ **INT. TIME Button**	Self-Timer/Time-Lapse (☞ pg. 43)	—
❺ **REC TIME Button**	Animation/Time-Lapse (☞ pg. 43)	—
❻ **FF Button**	Retake (forward) (☞ pg. 13)	FF/FF Shuttle Search (☞ pg. 34)
❼ **REW Button**	Retake (rewind)/Quick Review (☞ pg. 12, 13)	Rew/Rew Shuttle Search (☞ pg. 34)
❽ **PAUSE Button**	—	Pause (☞ pg. 35)
❾ **PLAY Button**	—	Playback start (☞ pg. 34)
❿ **SNAPSHOT Button**	Functions same as SNAPSHOT button on the camcorder. (☞ pg. 14)	—
⓫ **START/STOP Button**	Functions same as the Recording Start/Stop button on the camcorder.	
⓬ **VISS Button**	Index Code Marking (☞ pg. 43)	—
⓭ **ZOOM (T/W) Buttons**	Zoom in and out (☞ pg. 12)	—
⓮ **VCR CTL Button**	—	☞ pg. 38
⓯ **A.DUB Button**	—	Audio Dubbing (☞ pg. 45)
⓰ **STOP Button**	—	Stop (☞ pg. 34)
⓱ **INSERT Button**	—	Insert Editing (☞ pg. 44)
⓲ **R.A.EDIT Buttons**	—	☞ pg. 40



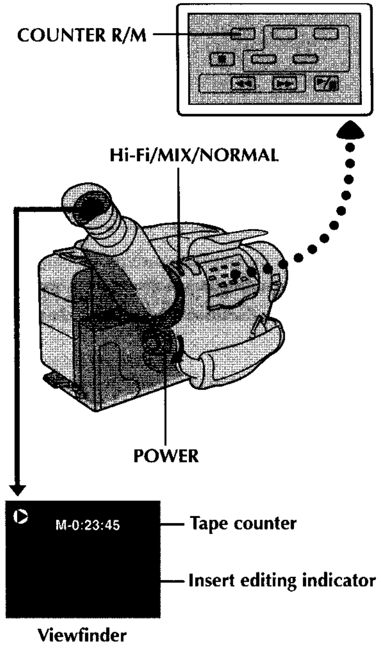
When using the remote control, be sure to point it at the remote sensor. The above illustration shows the approximate transmitted beam effective area for indoor use.
The transmitted beam may not be effective or may cause incorrect operation outdoors or when the remote sensor is directly exposed to sunlight or powerful lighting.

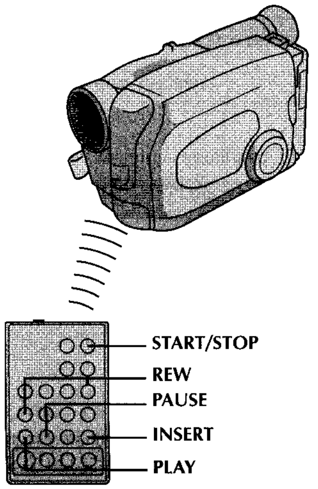




RM-V706U or RM-V709U (provided)

FEATURE:	**Self-Timer, Animation and Time-Lapse**
PURPOSE:	The remote control lets you set/release Interval Timer and Rec Time functions as well as the Menu screen.
OPERATION:	***Self-Timer*** **1) Set** Instead of performing steps **1** through **3** on pg. 30 ("Self-Timer"), press **INT. TIME** on the remote control. Each time **INT. TIME** is pressed, the Interval Timer indicator appears, changing in the following order: 15s, 30s, 1min, 5min and No indication (off). **2) Release** Instead of setting "Interval Timer" to "OFF" in the Menu, press **INT. TIME** on the remote control until the Interval Timer indicator disappears. ***Animation*** **1) Set** Instead of performing steps **1** and **2** on pg. 31 ("Animation"), press **REC TIME** on the remote control. Each time **REC TIME** is pressed, the Rec Time indicator appears, changing in the following order: 1/4s, 1/2s, 1s, 5s and No indication (off). **2) Release** Instead of using the Menu in step **5** on pg. 31, press **REC TIME** on the remote control until the Rec Time indicator disappears. ***Time-Lapse*** **1) Set** Instead of performing steps **1** through **3** on pg. 31 ("Time-Lapse"), press **INT. TIME** and **REC TIME** on the remote control. Each time **INT. TIME** is pressed, the Interval Timer indicator appears, changing in the following order: 15s, 30s, 1min, 5min and No indication (off). Each time **REC TIME** is pressed, the Rec Time indicator appears, changing in the following order: 1/4s, 1/2s, 1s, 5s and No indication (off). **2) Release** Instead of using the Menu in step **5** on pg. 31, press **INT. TIME** and **REC TIME** on the remote control until the indicators disappear.
NOTE:	*Also refer to pgs. 30 and 31.*
FEATURE:	**Index Code Marking**
PURPOSE:	To give you automatic access to any selected point on a recording.
OPERATION:	**1)** Press **VISS** once to place the index code. "INDEX" blinks in the viewfinder during marking.
NOTE:	*If **VISS** is pressed during Record–Standby mode, the mark is placed where **RECORDING START/STOP** is pressed.*





RM-V706U or RM-V709U
(provided)

Insert Editing

You can record a new scene and new Hi-Fi audio into a previously recorded tape, replacing a section of the original recording with minimal picture distortion at the in- and out-points. The original audio on the normal audio track remains unchanged.

NOTE:

Use the RM-V706U or RM-V709U remote control unit to perform this procedure.

1 SELECT MODE

Set the Power switch to "PLAY".

2 FIND EDIT-OUT POINT

Play back the tape, locate the point and press **PAUSE** on the camcorder or the remote control.

3 RESET COUNTER

Press and hold **COUNTER R/M** for more than 2 seconds to reset the tape counter, then press for less than 1 second and make sure "M" appears in the viewfinder.

4 FIND EDIT-IN POINT

Press **REW** to go a little beyond the beginning of the scene you want to replace, press **PLAY** to view the recorded tape, and press **PAUSE** at exactly at the point where the new scene should start.

5 ENGAGE INSERT EDITING MODE

Press and hold **INSERT**, and without releasing **INSERT**, press and release **PAUSE**. The Insert mode is engaged. When the scene the camcorder is aimed at appears on the screen, go to the next step.

6 BEGIN INSERT EDITING

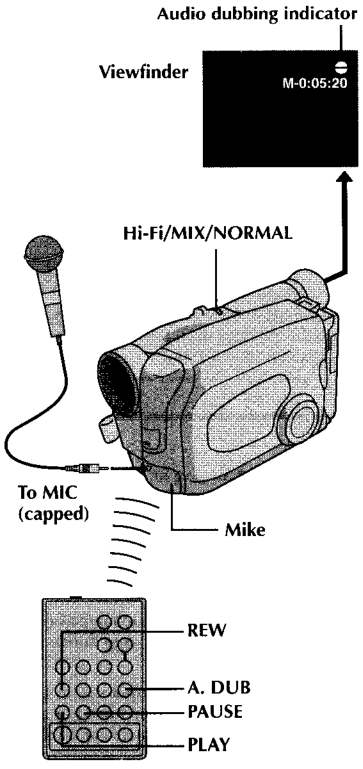
Press **Recording Start/Stop**. When the counter reaches "0:00:00", editing stops automatically and the camcorder enters the Insert-Pause mode.

7 END INSERT EDITING

Press **STOP**.

NOTES:

- *After step 5, Retake (☞ pg. 13) can be performed.*
- *The tape may stop slightly before or after the designated end point, and noise bars may appear. Neither indicates a defect in the unit.*
- *Only video and Hi-Fi audio signals are recorded in the Insert Editing mode.*
- *Press Hi-Fi/MIX/NORMAL to select the required playback audio soundtrack (☞ pg. 34).*
  - *HiFi : You can hear the inserted sound.*
  - *Mix : You can hear the inserted sound and the original one on the prerecorded tape.*
  - *Normal : You can hear the original sound on the prerecorded tape.*



RM-V706U or RM-V709U
(provided)

Audio Dubbing

You can record a new soundtrack on a prerecorded tape (in MONO on the normal audio track only.).

** Perform steps **1**, **2** and **3** of the Insert Editing procedure (☞ pg. 44) before continuing.

- The sound comes from the built-in mike (or an external mike if connected).

1 FIND EDIT-IN POINT

Press **REW** to go a little beyond the beginning of the scene onto which you want to dub new audio, press **PLAY** to view the recorded tape, then press **PAUSE** at exactly the point where dubbing should start.

2 ENGAGE AUDIO DUB STANDBY MODE

Press and hold **A. DUB**, and without releasing **A. DUB**, press and release **PAUSE.**

3 BEGIN AUDIO DUBBING

Press **PLAY**. When the counter reaches "0:00:00", Audio Dubbing stops automatically and the camcorder enters the Audio Dub-Standby mode.

4 END AUDIO DUBBING

Press **STOP**.

NOTES:

- *Do not press **FF** or **REW** during Audio Dub-Standby, or the edit points will not be accurate.*
- *If the mike is too close to the TV, or if the TV's volume is too high, whistling or howling may occur.*
- *During Audio Dubbing, only the dubbed sound is output. After Audio Dubbing is finished, press Hi-Fi/MIX/NORMAL to select the required playback audio soundtrack (☞ pg. 34).*
  - *HiFi : You can hear the original sound on the prerecorded tape.*
  - *Mix : You can hear the dubbed sound and the original one on the prerecorded tape.*
  - *Normal : You can hear the dubbed sound.*

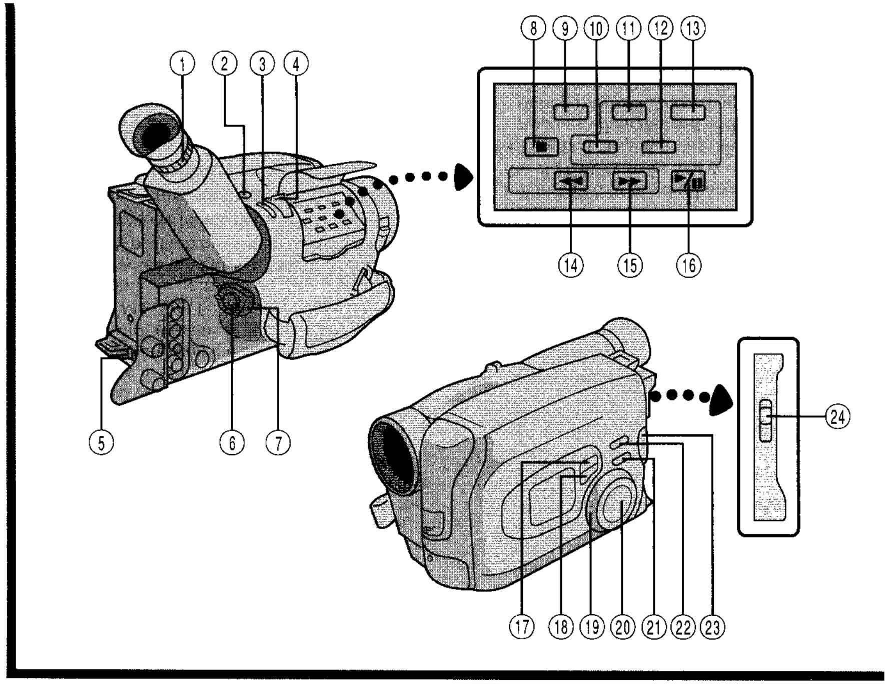
NOTES (for Insert Editing and Audio Dubbing):

- *Insert Editing and Audio Dubbing may not work correctly if the tape contains blank segments, or if the recording speed was changed during the original recording.*
- *To edit/dub onto a tape with the recording safety tab removed, cover the hole with adhesive tape.*
- *Do not press **STOP** during Insert Editing or Audio Dubbing, or the edit points will not be accurate.*
- *During Insert Editing and Audio Dubbing, when Insert-Pause or Audio Dub-Standby is engaged, the counter may go slightly past "0:00:00". Recording, however, stops at exactly 0:00:00.*

SYMPTOM	POSSIBLE CAUSE(S)
POWER	
No power is supplied.	● The battery pack has not been attached correctly (☞ pg. 4). ● The battery pack is not charged (☞ pg. 4). ● The power supply has not been correctly connected (☞ pg. 5).
The power suddenly goes off and doesn't come back on by itself.	● The battery pack has completely discharged. ● Remove the cassette and disconnect the power source, then after a few minutes, try turning the power back on. If it still doesn't come on, consult your nearest JVC dealer.
RECORDING	
Recording cannot be performed.	● The recording tape's Erase Protection tab is missing. Cover the hole with adhesive tape. (Some tapes have sliding tabs. In this case, check the position of the tab.)
Recording does not start.	● The camcorder Power switch has not been set to "CAMERA" (☞ pg. 11).
PLAYBACK	
The tape is running, but there's no playback picture.	● The TV has not been set to its VIDEO mode. ● If A/V connection is used, the TV's VIDEO/TV switch has not been set to VIDEO. ● The RF unit has not been set to the correct channel.
Noise bars appear in the playback picture (or Hi-Fi audio sound).	● Manual Tracking has not been performed (☞ pg. 35).
Playback picture is blurred or interrupted.	● The video heads are dirty or worn out. Consult your nearest JVC dealer for head cleaning or replacement.
The counter indication is blurred during Still playback.	● This is normal.
Tape was played back on VCR using cassette adapter but picture could not be viewed.	● Tapes recorded in S-VHS cannot be played back on regular VHS VCRs (☞ pg. 8). Connect camcorder directly either to VCR or to TV, then playback can be performed on camcorder (☞ pg. 32).
TAPE TRANSPORT	
The tape stops during fast-forward or rewind.	● The Counter Memory Function has been activated (☞ pg. 35).
Rewinding or fast-forwarding cannot be performed.	● The tape is already fully wound on one reel or the other.

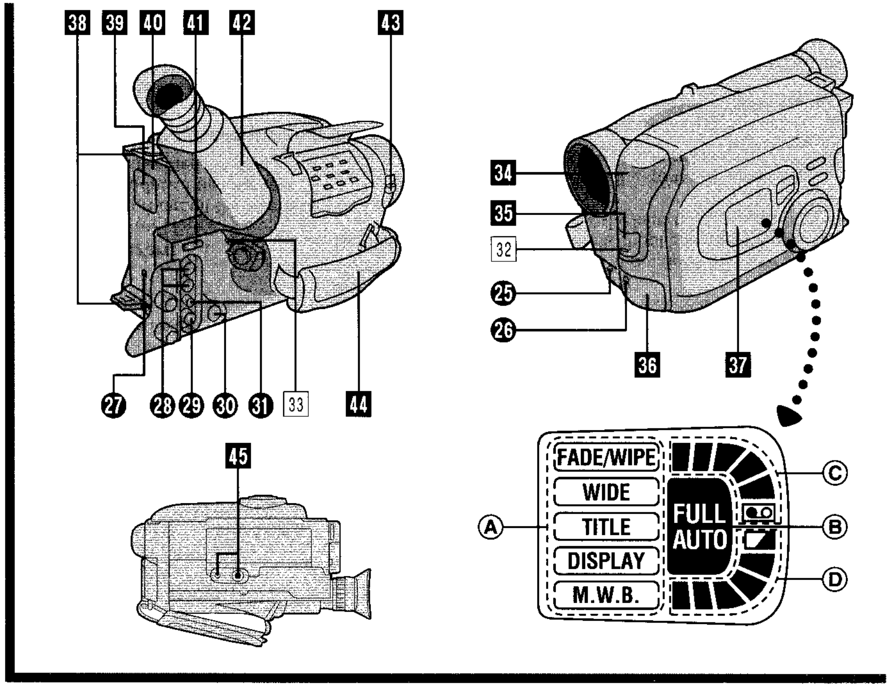
SYMPTOM	POSSIBLE CAUSE(S)
OTHER	
The tape won't eject.	● The battery pack is running low.
Some functions are not available.	● The PROGRAM AE select dial is set to "AUTO LOCK".
Vertical white lines appear when shooting a very bright object.	● This sometimes occurs when the contrast between the background and the object is great. It is not a defect of the camcorder.
Bright, crystal-shaped spots appear in the viewfinder.	● Sunlight is directly entering the lens.
An error number (i.e. E03) appears in the viewfinder.	● Turn the camcorder's power off, then disconnect the power source. After a few minutes, try turning the power on again. If the error number still appears in the viewfinder, consult your nearest JVC dealer.
The image is out of focus.	● The diopter needs to be adjusted (☞ pg. 6). ● The scene being shot is adversely affecting the operation of Auto Focus (☞ pg. 18).
A character generator title and the date and time displays disappear from the viewfinder.	● If you remove the power source from the camcorder while the power is on, all settings and selections are erased. Make sure to turn the camcorder's power off before disconnecting the power source.
The wrong date and time are displayed/recorded.	● If you have not performed Date/Time Setting (☞ pg. 7), the date and time are not displayed/recorded correctly. Be sure that Date/Time setting is carried out.
Even though the Lens Cover is open, the Lens Cover Warning indicator blinks.	● The Lens Cover Warning indicator may blink when the camcorder is used in dark areas, regardless of the position of the Lens Cover.
When the camcorder is swung or shaken, a noise can be heard.	● This camcorder is equipped with Auto Pause System which has a sensor for detection. Because of the sensor, when the camcorder is swung or shaken, noise can be heard from the sensor. This is not a malfunction.

The camcorder is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.) and clock battery; and then re-connect it and proceed as usual from the beginning.



Controls

① Diopter Adjustment ☞ pg. 6
② SNAPSHOT MODE Button ☞ pg. 14
③ • SNAPSHOT Button ☞ pg. 14
  • Hi-Fi/MIX/NORMAL Output Audio Select Button ☞ pg. 34
④ Power Zoom Lever ☞ pg. 12
⑤ BATT. [Battery] RELEASE Switch ☞ pg. 4
⑥ Recording Start/Stop Button ☞ pg. 11
⑦ POWER Switch ☞ pg. 11, 34
⑧ STOP Button ☞ pg. 34
⑨ Tape Length [30•45•60] Select Button ☞ pg. 8
  COUNTER R [Reset]/M [Memory] Button ☞ pg. 35
⑩ EDIT Button ☞ pg. 41
⑪ R.A.EDIT CANCEL Button ☞ pg. 40
⑫ • S-VHS/VHS Recording Format Select Button ☞ pg. 8
  • R.A.EDIT Button ☞ pg. 40
⑬ • R.A.EDIT IN/OUT Button ☞ pg. 40
  • AUTO PAUSE Button ☞ pg. 13
⑭ REW Button ☞ pg. 34
  RETAKE R [Quick Review] Button ☞ pg. 12, 13
⑮ FF Button ☞ pg. 34
  RETAKE F Button ☞ pg. 13
⑯ PLAY/PAUSE Button ☞ pg. 34
⑰ SELECT Button ☞ pg. 22
⑱ SET Button ☞ pg. 22
⑲ PROGRAM AE Select Dial ☞ pg. 16
⑳ Multi-Function Control
  • Exposure +/– ☞ pg. 21
  • Focus FAR/NEAR ☞ pg. 18
  • Menu Setting Change ☞ pg. 28
  • Tracking +/– ☞ pg. 35
㉑ MENU Button ☞ pg. 28
㉒ P. [Picture] STABILIZER Button ☞ pg. 20
㉓ PUSH Button ☞ pg. 9
㉔ EJECT Switch ☞ pg. 9



Connectors

㉕ J terminal (JLIP (Joint Level Interface Protocol) Connector.)
(Located beneath the jack cover)
- Connect the Editing Cable when performing Random Assemble Editing (☞ pg. 39).
- It is used to connect the camcorder to a device such as a personal computer.
  For further detail consult your nearest JVC dealer. Information (in English) is also available at our home page: http://www.jvc-victor.co.jp/

㉖ External MIC Jack (capped) ☞ pg. 45
㉗ DC IN Jack ☞ pg. 5

The jacks ㉘ to ㉛ are located beneath the jack cover.

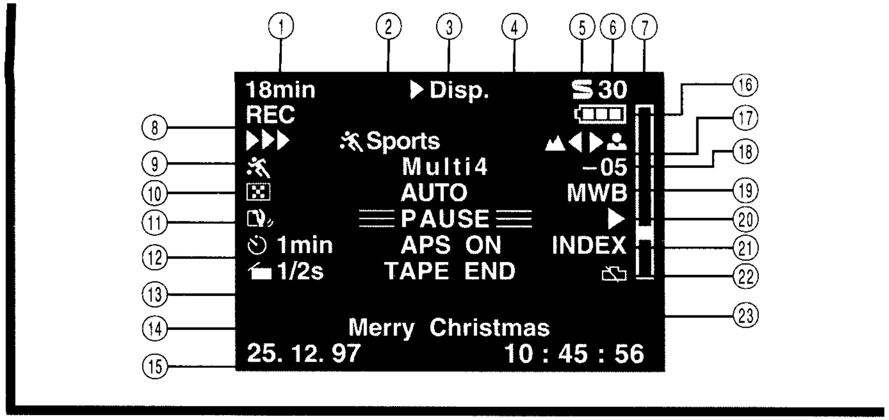
㉘ AUDIO L, R OUT Jack ☞ pg. 32
㉙ VIDEO OUT Jack ☞ pg. 32
㉚ Ⓢ-VIDEO OUT Jack ☞ pg. 32
㉛ RF DC OUT Jack ☞ pg. 33

Indicators

㉜ Tally Lamp ☞ pg. 11
㉝ Power On Indicator ☞ pg. 11

Other Parts

㉞ Video Light ☞ pg. 15
㉟ • Camera sensor
  Be careful not to cover this area; built-in here is the sensor necessary for shooting.
  • Remote sensor ☞ pg. 43
㊱ Microphone ☞ pg. 45
㊲ LCD window
  Ⓐ Program Manager Function Indicator
  Ⓑ Full Auto Indicator
    Displayed when the Program AE Select Dial is set to Auto Lock.
  Ⓒ Tape Loaded/Remaining Tape Indicators
  Ⓓ Remaining Battery Power Indicator
㊳ Shoulder Strap Eyelets ☞ pg. 10
㊴ Clock Battery Compartment ☞ pg. 6
㊵ Battery Pack Mount ☞ pg. 4
㊶ VIDEO LIGHT OFF/AUTO/ON Switch ☞ pg. 15
㊷ Electronic Viewfinder ☞ pg. 6
㊸ LENS COVER Switch ☞ pg. 11
㊹ Grip Strap ☞ pg. 10
㊺ Tripod Mounting Socket ☞ pg. 10



Viewfinder Indications

① Cassette Warning/Remaining Tape Time .... ☞ pg. 11
When no cassette is inserted: the Cassette (▭) Warning blinks.
When Erase Protection tab is not in the position that allows recording: the Cassette (▭) Warning lights. Otherwise, the Remaining Tape Time is displayed.

②, ⑨ PROGRAM AE Indicator .... ☞ pg. 16
Displayed at ② for approx. 1 second when the PROGRAM AE select dial is switched from one position to another. Then only the indicator remains at ⑨.

②, ⑩ Fade/Wipe Standby Indicator .... ☞ pg. 22
Displayed at ② for approx. 2 seconds when the Fade/Wipe is switched from one function to another by pressing the SET button. Then only the indicator remains at ⑩.

③ Program Manager Function Indication .... ☞ pg. 22
Appears when the PROGRAM AE select dial is set to any position other than AUTO LOCK.

④ Snapshot Mode Indicator .... ☞ pg. 14

⑤ Recording Format Indicator .... ☞ pg. 8

⑥ Tape Length Display .... ☞ pg. 8

⑦ Zoom Indicator Bar .... ☞ pg. 12

⑧ Recording Indicator .... ☞ pg. 11

⑪ Picture Stabilizer Indicator .... ☞ pg. 20

⑫ Interval Time/Recording Time Indicator .... ☞ pg. 30

⑬ • Record–Standby Mode Indicator .... ☞ pg. 11
• Lens Cover Warning:
LENS COVER .... ☞ pg. 11
• Auto Pause System Indicator .... ☞ pg. 13

⑭ Instant Titles Display .... ☞ pg. 24

⑮ Date/Time Character Display .... ☞ pg. 26

⑯ Battery Pack Remaining Power Indicator
Changes as follows according to the battery pack's remaining power level: "▮▮▮→▮▮▯→▮▯▯→▯▯▯".
When the power is almost gone, the indicator blinks, then the unit shuts off. Replace the battery pack with a fully charged one.
(**Note:** The symbol containing 3 darkened squares — ▮▮▮ — does not necessarily mean that the battery pack is fully charged.)

⑰ Focus Indicator .... ☞ pg. 18

⑱ Exposure Level Indicator .... ☞ pg. 21

⑲ White Balance Mode Indicator .... ☞ pg. 27

⑳ Menu Setting Change Indicator .... ☞ pg. 28

㉑ Index Code Marking .... ☞ pg. 43

㉒ Clock Warning
Once the power is turned on and the indicator blinks for about 10 seconds, perform the date and time settings (☞ pg. 7). After setting is complete, turn the power off and disconnect the power source. If you re-connect it and turn the power on and the indicator is blinking, that means that the clock (lithium) battery is either not installed or has discharged. Install, or replace the old battery with, a new one (☞ pg. 6).

㉓ • Tape End Display: TAPE END .... ☞ pg. 11
Appears when the end of the tape is reached during playback, recording or fast-forward.
• Condensation Warning: ▮
When this indication appears, all functions are disabled. Turn the unit off (without removing the power source) for a few hours, and when you turn it on again the indicator should disappear.

CAUTIONS

DANGER:

Video Light

- The video light becomes extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot.
- When operating, keep a distance of about 30 cm (1 ft.) between the video light and people or object.
- Do not use near flammable or explosive materials.

General Battery Precautions

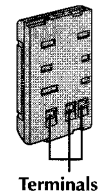
- When the C-P6U or C-P7U (cassette adapter) is not functioning even when correctly operated, the batteries are exhausted. Replace them with fresh ones.
- Use only the following batteries:
C-P6U or C-P7U .... R6 (AA) size

Please make note of the following rules for battery use. When misused, batteries can leak or explode.

1. Refer to the instructions when replacing the battery.
2. **Do not** expose batteries to excessive heat as they can leak or explode.
3. **Do not** dispose of batteries in a fire.
4. Remove the battery from the unit if it is to be stored for an extended period to avoid battery leakage which can cause malfunctions.

Battery Packs

The supplied battery pack is a nickel-cadmium battery. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:



1. **To avoid hazard . . .**
   .... **do not** burn.
   .... **do not** short-circuit the terminals.
   .... **do not** modify or disassemble.
   .... use only specified chargers.
2. **To prevent damage and prolong service life . . .**
   .... **do not** subject to unnecessary shock.
   .... avoid repeated charging without fully discharging.
   .... charge in an environment where temperatures are within the tolerances shown in the chart below. This is a chemical reaction type battery—cooler temperatures impede chemical reaction, while warmer temperatures can prevent complete charging.
   .... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
   .... avoid prolonged uncharged storage.
   .... remove from charger or powered unit when not in use, as some machines use current even when switched off.
3. **To prevent damage to the camcorder . . .**
   .... replace the battery pack when it begins to deliver less recording time per charge.

NOTE:

It is normal for the battery pack to be warm after charging, or after use.

Temperature Ranges

Charging	10°C to 35°C
Operation	0°C to 40°C
Storage	–10°C to 30°C

NOTES:

- *Recharging time is based on room temperature of 20°C.*
- *The lower the temperature, the longer recharging takes.*

Cassettes

To properly use and store your cassettes, be sure to read the following cautions:

1. **During use . . .**
   .... make sure the cassette bears the S-VHS-C or VHS-C mark.
   .... be aware that recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
   .... make sure the cassette is positioned properly when inserting.
   .... do not load and unload the cassette repeatedly without allowing the tape to run at all. This slackens the tape and can result in damage.
   .... do not open the front tape cover. This exposes the tape to fingerprints and dust.
2. **Store cassettes . . .**
   .... away from heaters or other heat sources.
   .... out of direct sunlight.
   .... where they won't be subject to unnecessary shock or vibration.
   .... where they won't be exposed to strong magnetic fields (such as those generated by motors, transformers or magnets).
   .... vertically, in their original cases.

Main Unit

1. **For safety, DO NOT . . .**
   .... open the camcorder's chassis.
   .... disassemble or modify the unit.
   .... short-circuit the terminals of the battery pack. Keep it away from metallic objects when not in use.
   .... allow inflammables, water or metallic objects to enter the unit.
   .... remove the battery pack or disconnect the power supply while the power is on.
   .... leave the battery pack attached when the camcorder is not in use.
2. **Avoid using the unit . . .**
   .... in places subject to excessive humidity or dust.
   .... in places subject to soot or steam such as near a cooking stove.
   .... in places subject to excessive shock or vibration.
   .... near a television set.
   .... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
   .... in places subject to extremely high (over 40°C) or extremely low (under 0°C) temperatures.
3. **DO NOT leave the unit . . .**
   .... in places of over 50°C.
   .... in places where humidity is extremely low (below 35%) or extremely high (above 80%).
   .... in direct sunlight.
   .... in a closed car in summer.
   .... near a heater.
4. **To protect the unit, DO NOT . . .**
   .... allow it to become wet.
   .... drop the unit or strike it against hard objects.
   .... subject it to shock or excessive vibration during transportation.
   .... keep the lens directed at extremely bright objects for long periods.
   .... direct the eyepiece of the viewfinder at the sun.
   .... carry it by holding the viewfinder.
   .... swing it excessively when using the shoulder strap.
5. **This camcorder features a built-in head cleaner which automatically cleans the heads and head drum when a cassette is loaded or unloaded. If, however, the heads become dirty and cause blurriness or interruption in the playback picture, consult your nearest JVC dealer.**

About moisture condensation . . .

- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass' outer surface. This same phenomenon occurs on the head drum of a camcorder when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the camcorder itself.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

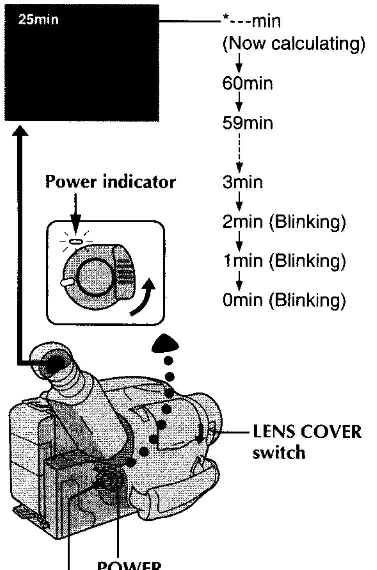
For Your Maintenance

1. **After Use**
   ① Set the power switch to POWER OFF to turn off the camcorder.
   ② Slide EJECT to open the cassette holder, then remove the cassette.
   ③ Close and lock the cassette holder by pressing PUSH.
   ④ Press BATT. RELEASE to remove the battery pack.
   ⑤ Slide the LENS COVER open/close switch to close the lens cover.
2. **Cleaning The Camcorder**
   ① **CLEAN EXTERIOR**
   Wipe gently with a soft cloth.
   ② **CLEAN LENS**
   Blow it with a blower brush, then wipe gently with lens cleaning paper.
   ③ **REMOVE EYEPIECE**
   Turn the eyepiece counterclockwise and pull it out.
   ④ **CLEAN VIEWFINDER**
   Remove dust using a blower brush.
   ⑤ **RE-ATTACH EYEPIECE**
   Align the marks, re-attach the eyepiece and turn it clockwise.

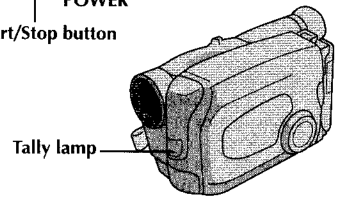
NOTES:

- *Avoid using strong cleaning agents such as benzine or alcohol.*
- *Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.*
- *Mold may form if the lens is left dirty.*

Tape remaining time indicator



Start/Stop button



NOTE:

You should already have performed the procedures listed below. If not, do so before continuing.

- *Power (☞ pg. 4)*
- *Date/Time Setting (☞ pg. 7)*
- *Tape Length Setting (☞ pg. 8)*
- *Recording Format Setting (☞ pg. 8)*
- *Grip Adjustment (☞ pg. 10)*

1 LOAD A CASSETTE

Slide EJECT to open the cassette holder, then insert the cassette with the label facing out. Press PUSH to ensure the holder is closed and locked.

2 ENTER RECORD–STANDBY MODE

Slide the LENS COVER open/close switch to open the lens cover, then set the power switch to "CAMERA".

- The power indicator lights and the camcorder enters the Record–Standby Mode.
- The scene you're aimed at appears on the viewfinder screen, with the word "PAUSE" superimposed upon it.

3 START SHOOTING

Press the **Start/Stop** button.

- The tally lamp lights while recording is in progress, and "REC ▶▶▶" appears in the viewfinder.

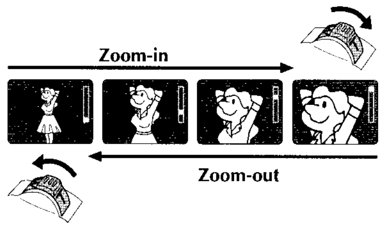
4 STOP RECORDING

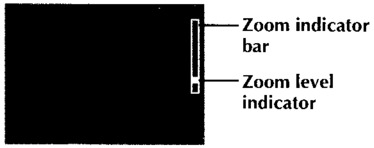
Press the **Start/Stop** button again to stop recording.

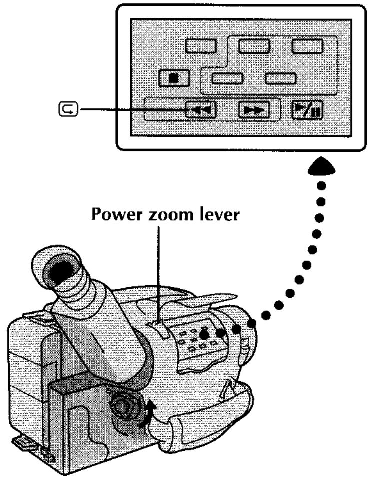
- The camcorder re-enters the Record-Standby mode.

NOTES:

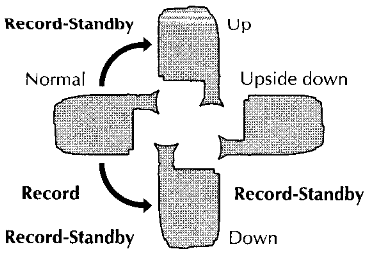
- *A cassette holder can't be opened unless a power supply is attached.*
- *There may be a delay after you slide EJECT until the holder opens. Do not use force.*
- *The tape's remaining time is displayed in the viewfinder as shown.*
- *The indicated remaining time is approximate.*
- *The time required to calculate the remaining tape length, and the accuracy of the calculation, may vary according to the type of tape used.*
- *The tape remaining time displayed in the viewfinder is correct only if the correct tape length has been selected (☞ pg. 8).*
- *"TAPE END" appears when the tape reaches its end, and the power goes off automatically if left in this condition for 5 minutes. "TAPE END" also appears when a cassette whose tape is already at its end is loaded.*
- *If the Record–Standby mode continues for 5 minutes without performing Zoom or any other operations, the camcorder's power shuts off automatically. Set the Power switch to "POWER OFF", and then back to "CAMERA" to turn the camcorder on again.*
- *If the Recording Start/Stop button is pressed after the Record-Standby mode has continued for over 5 minutes, recording may not start immediately.*
- *If you're recording on a cassette from the middle, use the RETAKE function (☞ pg. 13) to find the end of the last recording so you don't erase any of it.*
- *The LENS COVER warning blinks for about 10 seconds when the camcorder is turned on, when the cover is closed.*

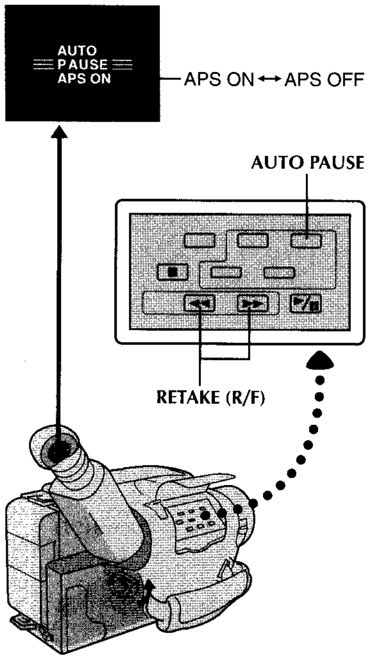




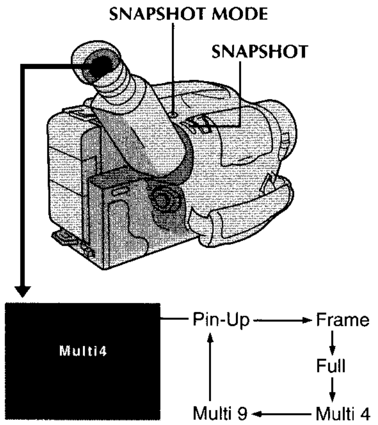


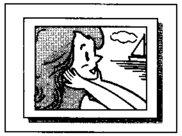
FEATURE:	**Zooming**
PURPOSE:	To produce the zoom in/out effect, or an instantaneous change in image magnification.
OPERATION:	**36X Hyper zoom** Digital circuitry doubles the maximum 18x magnification offered by optical zoom. 1) To zoom in, slide the Zoom Lever toward "T". 2) To zoom out, slide toward "W". **180X Hyper zoom** The maximum 180x zoom magnification is available through digital processing when Programme AE is set to 180x. (☞ pg. 17)
NOTES:	• *During Hyper Zoom, the speed increases the further you slide the Zoom Lever.* • *Focusing may become unstable during Hyper Zoom. In this case, set the zoom while in Record–Standby, set manual focus or Focus Lock (☞ pg. 18, 19), then zoom in or out in Record mode.* • *The Zoom Level Indicator (■) only moves during optical zoom. Once the Zoom Level indicator reaches the top of the zoom indicator bar, all magnification from that point is through digital processing.* • *During digital image processing, the quality of the image may suffer.* • *Snapshot (☞ pg. 14), Dissolve and Auto Select in Fade/Wipe (☞ pg. 23), do not function when Programme AE is set to 180x.*
FEATURE:	**Quick Review**
PURPOSE:	To check the end of the last recording.
OPERATION:	1) Press "↩" and release quickly during the Record–Standby mode. • Tape is rewound for about 2 seconds and played back automatically, then pauses in Record–Standby mode for the next shot.
NOTE:	*Distortion may occur at start of playback. This is normal.*



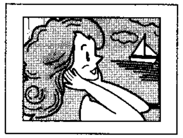


FEATURE:	**Retake**
PURPOSE:	To re-record certain segments.
OPERATION:	**1)** Make sure the camcorder is in the Record–Standby mode. **2)** Press either **RETAKE** button to reach the start point for new recording. Pressing "F" forwards the tape and pressing "R" reverses it. **3)** Press Recording Start/Stop to start recording.
NOTE:	*Noise may appear during Retake. This is normal.*
FEATURE:	**Auto Pause System**
PURPOSE:	To automatically stop recording when the camcorder is pointed down, preventing accidental recordings of the ground, your feet, etc.
OPERATION:	**1)** Press **AUTO PAUSE** so that "APS ON" appears in the viewfinder for 2 seconds. When the camcorder is tilted down by a large degree from its horizontal position during recording, the Record-Standby mode is automatically engaged. During this, "AUTO" is displayed above "≡PAUSE≡". • To switch off the Auto Pause System, press **AUTO PAUSE** again so that "APS OFF" appears in the viewfinder for 2 seconds.
NOTES:	• *The Auto Pause System is also effective when the camcorder is pointed up, or is positioned upside down.* • *Auto Pause also works when the camcorder is twisted by a large degree to the left or right.* • *When you want to shoot in any of the aforementioned positions, be sure to switch off Auto Pause.*

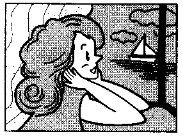




Pin-Up
A still image on a blue background. The image is bordered in white and a shadow effect is added to give it a more dimensional feel.

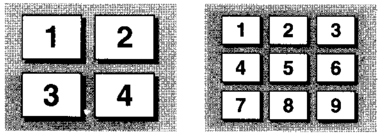


Frame
A still image with a white border is recorded.



Full
A still image that occupies the entire image field is recorded.

Multi-Analyzer 4/Multi-Analyzer 9



Record multiple images in one scene (4 or 9 at a time). The images appear and are stored in this order: 1, 2, 3, 4 (5, 6, 7, 8, 9 for Multi-Analyzer 9). In the Motor Drive mode, after "9", the next image recorded is "1", and the cycle is repeated.

Snapshot

This interesting feature lets you record several types of digital still images that look, and sound, like photographs. It's a great way to spice up footage of events such as parties, weddings and graduations.

1 SELECT SNAPSHOT MODE

Press **SNAPSHOT MODE** to cycle through the modes as shown in the illustration at left. Once the desired mode appears, it is selected and activated, and its indicator appears, within 2 seconds.

2 PERFORM SNAPSHOT RECORDING

Press **SNAPSHOT**.

If you press during recording . . .
.... a still image is displayed and recorded in the selected mode, then the camcorder resumes normal recording. In the Full and Frame modes, the new image comes in gradually overall. In the Pin-Up and Multi-Analyzer modes, the new image comes in gradually from the center.

If you press during Record–Standby . . .
.... a still image is displayed and recorded in the selected mode, then the camcorder re-enters the Record–Standby mode.

Motor Drive Function

1 SELECT SNAPSHOT MODE

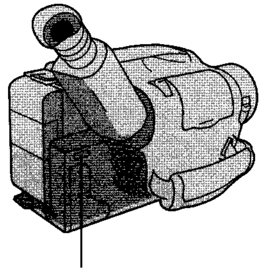
Select as in step **1** above.

2 ACTIVATE MOTOR DRIVE

During Snapshot recording, press and hold down **SNAPSHOT**. You can take rapid snapshots with an interval of approximately 0.7 seconds between stills.

NOTES:

- *The Date/Time and title display will disappear during Snapshot recording.*
- *The Motor Drive function cannot be activated using the **SNAPSHOT** button on the RM-V706U/V709U remote control unit (provided).*
- *When Multi-Analyzer is activated, the shutter sound may not match the appearance of the images.*
- *Snapshot recording does not function when programme AE is set to 180x (☞ pg. 17)*



Video Light

When natural lighting is too dim, you can brighten the scene by using the built-in video light.

1 SET VIDEO LIGHT

Set the **LIGHT OFF/AUTO/ON** as required.

ON	Always keeps the light on as long as the camcorder is turned on.
AUTO	Automatically turns on the light when the camcorder senses insufficient lighting on the subject.
OFF	Turns off the light.

- The video light can be used with the camcorder's power on.
- It is recommended to set the white balance (☞ pg. 27) to indoor mode (✱) when you use the video light.
- When not using the video light, turn it off to save battery power.

NOTES:

- *Even if the battery indicator (▭) does not blink in the viewfinder, if the battery pack's charge is low, the camcorder may turn off automatically when you turn on the video light, or when you start recording with the video light turned on.*
- *When the **LIGHT OFF/AUTO/ON** switch is set to "AUTO":*
  - *Depending on the lighting conditions, the video light may keep turning on and off. In this case, manually switch the light on or off using the **LIGHT OFF/AUTO/ON** switch.*
  - *While the Sports or High-Speed Shutter mode (☞ pg. 17) is engaged, the light is likely to stay on.*
  - *While the Twilight mode (☞ pg. 17) is engaged, the light will not activate.*

DANGER

- The video light become extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the camcorder into the carrying case immediately after using the video light, since it remains extremely hot.
- When operating, keep a distance of about 30 cm. between the video light and people or objects.
- Do not use near flammable or explosive materials.
- It is recommended that you consult your nearest JVC dealer for replacing the video light.

Programme AE With Special Effects

All you have to do to access any of the variety of shooting effects is to turn the PROGRAM AE select dial.

1 SELECT MODE

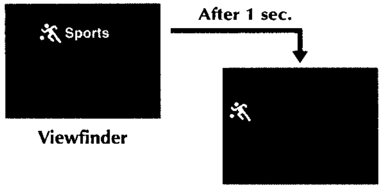
Turn the PROGRAM AE select dial until the symbol of the function you want is aligned with the mark.

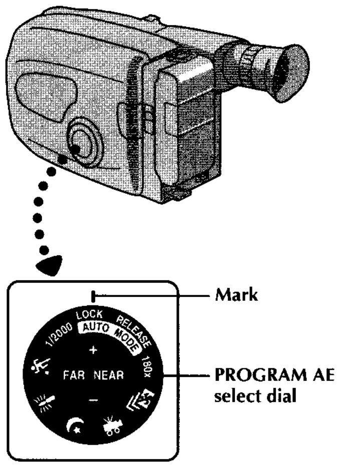
- The selected mode's name and its indication are displayed in the viewfinder for approx. 1 second. Then the name disappears, and only the indication remains. The mode is activated.
- When Auto Mode Lock or Auto Mode Release mode is selected, only the mode's name is displayed. Then the name disappears and the mode is activated.

NOTES:

- *Only one effect can be engaged at a time.*
- *The screen becomes slightly dark in the High Speed Shutter mode. Use in well-lighted situations.*
- *In the High Speed Shutter or Sports modes, picture colour may be adversely affected if subject is lit by alternating discharge-type light sources such as flourescent or mercury-vapour lights.*

1 second later, the mode is activated.





DIAL SYMBOL	VIEWFINDER INDICATION	MODE
LOCK	Auto Lock	Auto Mode Lock

Auto Mode Lock
Locks the camcorder in Full Auto mode, preventing incorrect operation due to accidental button pressing during shooting.

- In this mode the following controls are disabled; Fade/Wipe, Wide, Title, Display, M.W.B. (Manual White Balance), Manual Focus, Focus Lock, Exposure Control and MENU.

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
RELEASE	Auto Release	Auto Mode Release

Auto Mode Release
Re-enables the controls that were disabled by Auto Mode Lock.

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
180x	D.Zoom 180x	180x Digital Zoom

180X Digital Zoom
Boosts the maximum zoom magnification to approx. 180x.

- Snapshot (☞ pg. 14), Dissolve and Auto Select in Fade/Wipe (☞ pg. 23) do not function.

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
	Strobe	Strobe

Strobe
Freezes images in rapid succession.

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
	Classic Film	Classic Film

Classic Film
A strobe effect that gives the black and white picture a "flickery" effect like an old movie.

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
	Twilight	Twilight

Twilight
Dusk, twilight scenery, fireworks, etc., look more natural and dramatic. The following happens when Twilight mode is selected:

- Auto gain control is turned off.
- White Balance is set to "☀" (outdoor mode), but can also be manually changed to another mode (☞ pg. 27).
- Auto Focus becomes available only in the range of 10 m to infinity. To focus when the subject-to-camera distance is less than 10 m, use manual focusing (☞ pg. 19).

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
	Slow Shutter	Slow Shutter

Slow Shutter
Sets the shutter speed to 1/12.5 sec. and boosts the sensitivity so that the camcorder can record subjects even in virtual darkness.

- Use it only in dark locations.
- The picture flickers like a quick strobe.

DIAL SYMBOL	VIEWFINDER INDICATION	MODE
	Sports	Sports

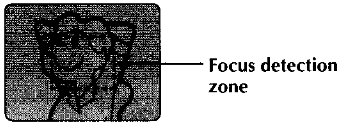
Sports
High shutter speed clearly captures fast-moving action.

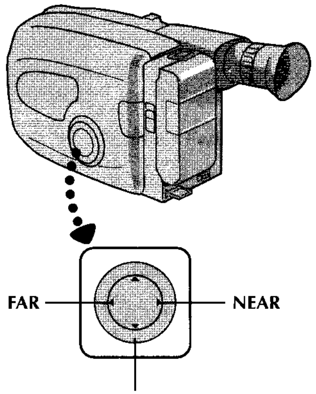
DIAL SYMBOL	VIEWFINDER INDICATION	MODE
1/2000	2 S 1/2000	1/2000 sec. High Speed Shutter

High-Speed Shutter (1/2000s.)
Captures faster action than Sports mode.

NOTES:

- *When the Classic Film effects are activated, manual white balance adjustment (☞ pg. 27) is not possible.*
- *When Slow Shutter is activated, Auto Focus may not work properly.*
- *When Slow Shutter is activated, bright spots may appear on the screen. This is not a camcorder malfunction.*
- *Certain effects cannot be used together with other functions. When an effect not usable in the present situation is selected, its indicator blinks.*
- *Snapshot (☞ pg. 14), Dissolve and Auto Select in Fade/Wipe (☞ pg. 23) do not function when programme AE is set to 180x.*





PROGRAM AE select dial

Focusing

Auto Focus

The camcorder's Full Range AF system offers continuous shooting ability from close-up to infinity. However, correct focus may not be obtainable in the situations listed below (in these cases use manual focusing):

- When two subjects overlap in the same scene.
- When illumination is low.*
- When the subject has no contrast (difference in brightness and darkness), such as a flat, one-colour wall, or a clear, blue sky.*
- When a dark object is barely visible in the viewfinder.*
- When the scene contains minute patterns or identical patterns that are regularly repeated.
- When the scene is affected by sunbeams or light reflecting off the surface of a body of water.
- When shooting a scene with a high-contrast background.

* The low-contrast warning "▲▲" appears in the viewfinder.

Focus Lock

This feature locks the focus in place, which is especially helpful in the following situations:

- When things pass between your subject and the camcorder. Engage the focus lock function to lock your subject in before recording.
- When you want your subject to be focused, and to appear in a corner of the screen. First, center on the subject and focus using auto focus mode. Then engage the focus lock function and move the camcorder until the subject is where you want it.

1 SELECT MODE
Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 LOCK FOCUS
Press **FAR** or **NEAR**. The focus lock indication "▲▲" appears in the viewfinder.

3 RELEASE FOCUS LOCK
Press **FAR** and **NEAR** simultaneously. The focus lock indication disappears.

NOTES:

- *If the lens is smeared or blurred, accurate focusing is not possible. Keep the lens clean, wiping with a piece of soft cloth if it gets dirty. When condensation occurs, wipe with a soft cloth or wait for it to dry naturally.*
- *When shooting a subject close to the lens, zoom-out first (☞ pg. 12). If zoomed-in in the auto focus mode, the camcorder could automatically zoom out depending on the distance between the camcorder and the subject. *When Tele Macro (☞ pg. 29) is activated, the camcorder will not zoom out automatically.*

Bk Black Fader
Fades in/out to a black screen.

Mosaic Fader
Gradually turns/returns the picture into/from a mosaic pattern.

Shutter Wipe
A black screen moves in from the top and bottom, closing over the image like a shutter, or a new image pushes open the black screen vertically from the centre. *During Auto Select mode, the new image wipes in over the old image, not a black screen.

Slide Wipe
A black screen moves in from the left to gradually cover the image, or a new image moves in from right to left. *During Auto Select mode, the new image wipes in over the old image, not a black screen.

Corner Wipe
A black screen starts in the lower left corner and gradually fills the screen, or a new image starts in the upper right corner and fills the black screen. *During Auto Select mode, the new image wipes in over the old image, not a black screen.

P Dissolve

1. Press the Recording Start/Stop button.
   — Recording starts.
2. Press the Recording Start/Stop button again.
   — Recording stops, and the Record–Standby mode is engaged.
   — Now the last scene is stored in memory.

⬇ Before the power turns off...

3. Press the Recording Start/Stop button to resume recording.
   — The stored scene is gradually replaced by the new scene being shot.

SCROLL WIPE (AUTO SELECT only)
A new image scrolls up onto the screen.

WINDOW WIPE (AUTO SELECT only)
A new image enters from the centre and moves towards the corners of the screen.

DOOR WIPE (AUTO SELECT only)
A new image opens like a door onto the screen.

— — Auto Select
Press the Recording Start/Stop button to begin or end recording, and 6 wipe-ins are automatically generated, in the order shown below:

SLIDE WIPE
↓
SCROLL WIPE
↓
CORNER WIPE
↓
WINDOW WIPE
↓
DOOR WIPE
↓
SHUTTER WIPE

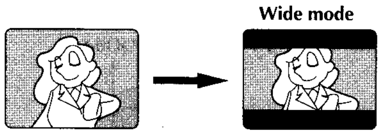
1. Press the Recording Start/Stop button.
   — Recording starts.
2. Press the Recording Start/Stop button again.
   — Recording stops and the Record-Standby mode is engaged.
   — Now the last scene is stored in memory.

⬇ Before the power turns off...

3. Press the Recording Start/Stop button to resume recording.
   — The new scene gradually wipes in over the stored scene.
   — Repeat steps **2** and **3** as you like.

NOTES (for Dissolve and Auto Select):

- *Turning off the camcorder will erase the scene stored in memory. When a scene is erased from memory, the symbol indication blinks.*
- *The sound for the last recording's scene is not stored in memory.*
- *This mode indicator blinks unless an image is stored in memory. In this case, shoot a scene first.*



Wide

This feature allows you to record black bars at the top and bottom of the screen to produce a cinema-like "wide-screen" effect.

1 SELECT MODE
Turn the PROGRAM AE select dial to any position except AUTO LOCK.

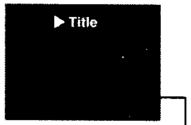
2 SELECT FUNCTION
Press **SELECT** repeatedly until "▶**Wide**" appears.

3 ENGAGE WIDE MODE
Press **SET**.

4 RESTORE NORMAL SCREEN
Press **SET** again while "▶**Wide**" appears.

Instant Titles

The camcorder has eight preset titles in memory. You can superimpose one of them above a previously stored title as shown in the illustration to the left.



Title indication

Happy Birthday
↓
Happy Holidays
↓
Our Family
↓
Movie Star
↓
Party Time
↓
Merry Christmas
↓
Wedding Day
↓
Congratulations
↓
The characters you have set using Character Generator

No indication

DISPLAY

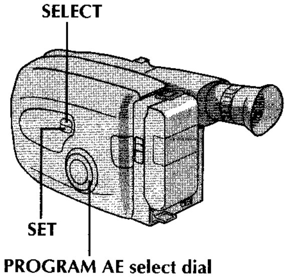
1 SELECT MODE
Turn the PROGRAM AE select dial to any position except AUTO LOCK.

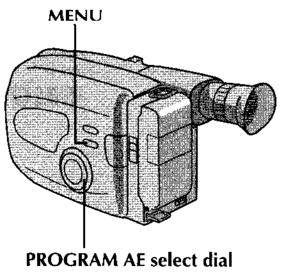
2 SELECT FUNCTION
Press **SELECT** repeatedly until "▶**Title**" appears.

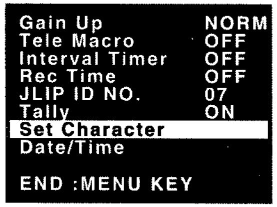
3 SELECT PRESET TITLE
Engage the Record–Standby mode, then press **SET** to cycle through the preset titles until the desired title is displayed.

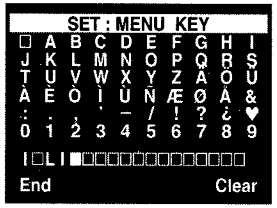
NOTES:

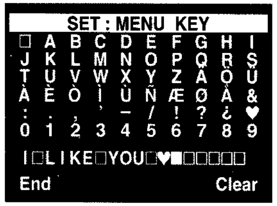
- *To delete the Instant Titles during recording, press **SELECT** repeatedly until "▶**Title**" appears then press **SET**.*
- *To recall a title, press **SET** again.*




MENU
PROGRAM AE select dial


Gain Up NORM
Tele Macro OFF
Interval Timer OFF
Rec Time OFF
JLIP ID NO. 07
Tally ON
Set Character
Date/Time
END :MENU KEY


SET : MENU KEY
□ A B C D E F G H I
J K L M N O P Q R S
T U V W X Y Z Ä Ö Ü
À È Ò Ì Ù Ñ Æ Ø Å &
: . , ' – / ! ? ¿ ♥
0 1 2 3 4 5 6 7 8 9
I□L I ■□□□□□□□□□□□□□
End Clear


SET : MENU KEY
□ A B C D E F G H I
J K L M N O P Q R S
T U V W X Y Z Ä Ö Ü
À È Ò Ì Ù Ñ Æ Ø Å &
: . , ' – / ! ? ¿ ♥
0 1 2 3 4 5 6 7 8 9
I□L I KE□YOU□♥■□□□□□
End Clear

Character Generator

You can enter an original title of up to 18 characters.

1 ACCESS MENU SCREEN

Turn the PROGRAM AE select dial to any position except AUTO LOCK, then press **MENU**.

2 ACCESS CHARACTER SET MENU

Press + or – to move the highlight bar to "Set Character", then press **NEAR**. The Character Set menu appears.

3 INPUT CHARACTERS

Press +, –, **FAR** or **NEAR** to make the desired character blink, then press **MENU**. The selected characters appear at the bottom of the screen. Repeat as many times as desired (max. 18).

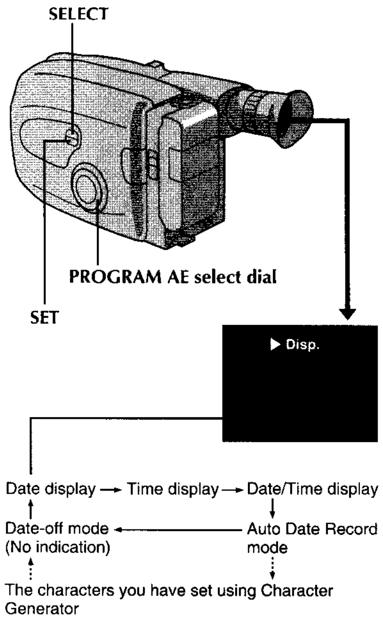
- To select the location of the next character, press +, –, **FAR** or **NEAR** to make the row of squares blink at the bottom of the screen, then press **FAR** or **NEAR** to move the blinking cursor underneath the desired location. Press + when you're done, and the blinking cursor returns to the character grid.

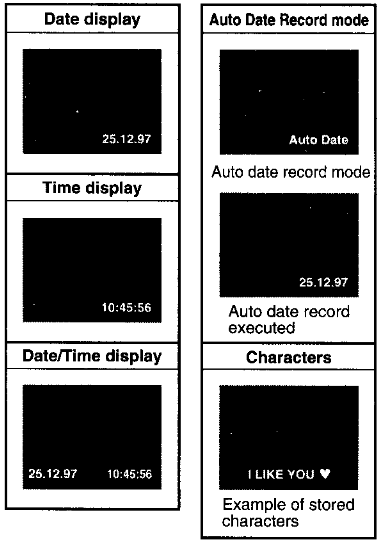
4 END CHARACTER SETTING

Press +, –, **FAR** or **NEAR** to make "End" blink, then press **MENU** twice to return to the normal screen.

NOTES:

- *To erase a character you entered mistakenly, make "Clear" blink by pressing +, –, **FAR** or **NEAR**, then press **MENU**. All characters are deleted at once. Or, to erase selected characters only, first move the blinking cursor to the character at the bottom row which you want to replace, then press +, **FAR** or **NEAR** to highlight "□" in the top left corner, and then press **MENU**.*
- *To display the characters you have set — "Instant Titles" (☞ pg. 24) or "Date/Time/Character Insert" (☞ pg. 26).*
- *Characters may be set only in the Record-Standby mode.*


SELECT
SET
PROGRAM AE select dial
▶ Disp.
Date display → Time display → Date/Time display
Auto Date Record mode
Date-off mode (No indication)
The characters you have set using Character Generator


Date display
25.12.97
Time display
10:45:56
Date/Time display
25.12.97 10:45:56
Auto Date Record mode
Auto Date
Auto date record mode
25.12.97
Auto date record executed
Characters
I LIKE YOU ♥
Example of stored characters

Date/Time Character Insert

This feature allows you to display date, time and characters in your viewfinder and on a connected color monitor, record them manually or automatically, and even make your own titles.

NOTE:

You should already have performed the Date/Time Setting procedure (☞ pg. 7). If you haven't, do so before continuing.

DISPLAY

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT DISPLAY

Press **SELECT** repeatedly until "**▶Disp.**" appears.

3 CHOOSE DISPLAY MODE

Press **SET** while in Record–Standby to cycle through the modes as shown in the illustration at left.

NOTES:

- *The selected display can be recorded.*
- *If you don't want to record the display, select Date-off mode before shooting.*
- *If you want to delete the display during shooting, press **SELECT** repeatedly until "**▶Disp.**" appears then press **SET**.*
- *To recall the display, press **SET** again.*

AUTO DATE RECORD

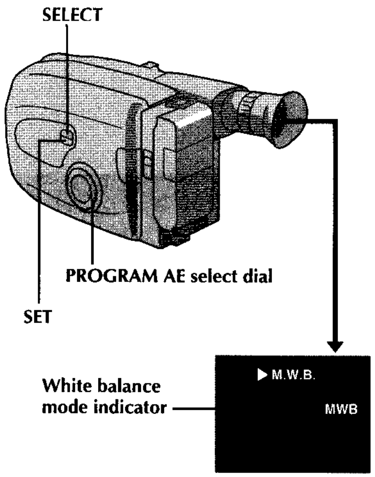
Your camcorder automatically records the date for about 5 seconds after recording is initiated in the following situations:

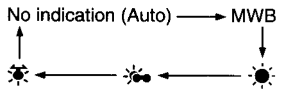
- After changing the date.
- After loading a cassette.
- After Auto Date Record mode is selected by pressing **SET**.

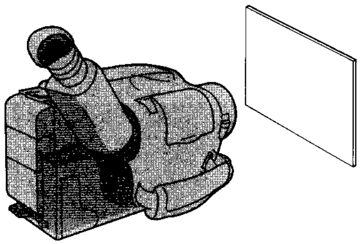
In this mode, the date is replaced after 5 seconds with "Auto Date".

NOTES:

- *Setting **PROGRAM AE** to LOCK always engages the Auto Date Record mode, and disables all other modes.*
- *In the Auto Date Record mode, if the date changes while you're shooting, the date indication is recorded for about 5 seconds from that point. It is not recorded during any other recordings made on that day.*







Manual White Balance Adjustment (M.W.B.)

This camcorder's Automatic Colour Temperature system senses the colour temperature of the ambient lighting for automatic white balance adjustment. However, precise colour adjustment is not possible under the following conditions:

- When an object is in various shades of the same colour.
- When a predominantly red or brown object is being shot outdoors.

In these cases, use the camcorder's built-in preset filters for white balance adjustment.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 SELECT FUNCTION

Press **SELECT** reapeatedly until "**▶M.W.B.**" appears.

3 SELECT WHITE BALANCE

Press **SET** (Manual White Balance) until the required indication appears in the viewfinder.

"MWB" ..... With a memorized personal White Balance setting (see below)
"☀" .... Outdoors on sunny day
"⛅" .... Outdoors on cloudy day
"✺" .... Light source is halogen or tungsten lamp

MWB

MWB sets the colour temperature for the subject's light source so you can shoot with natural colours that are unaffected by surroundings, even when there are multiple subjects with different colour temperatures.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ADJUST FOCUS

Point the camcorder at a white, flat object such as a sheet of white paper, and adjust focus manually (☞ pg. 19).

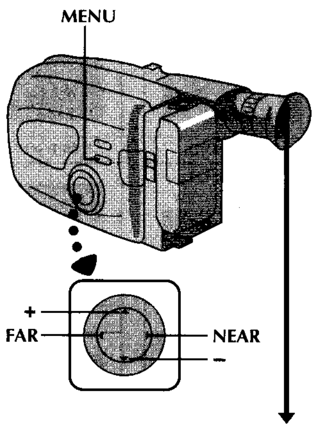
3 ADJUST WHITE BALANCE

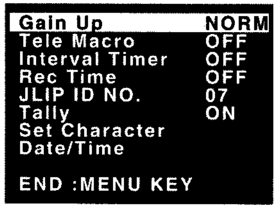
Press **SET** until "MWB" appears, then press and hold **SET** for more than 3 seconds.

- "MWB" blinks in the viewfinder during adjustment, then stops blinking but stays lit when adjustment is complete.

NOTES:

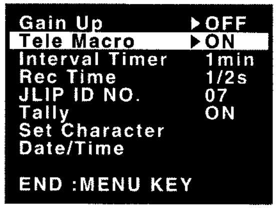
- *To switch to automatic white balance adjustment, press **SET** until the indication disappears, or turn the PROGRAM AE select dial to "AUTO LOCK".*
- *Re-adjust the White Balance when the lighting has changed, when the camcorder has been turned off and on again, or when the PROGRAM AE select dial's position has been changed.*
- *It is helpful to connect your camcorder to a colour monitor when adjusting the white balance ("Basic Connections" ☞ pg. 30).*
- *When adjusted by putting coloured paper in front of the subject in step **2** ("ADJUST FOCUS"), this unit makes its colour temperature standard for automatic white balance. So you can enjoy shooting with different colours. For example, when adjusting with red, blue or yellow colours, the image becomes the colour which aproximates to green, orange or purple respectively.*





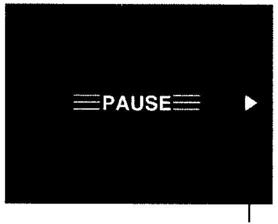
```
Gain Up          NORM
Tele Macro       OFF
Interval Timer   OFF
Rec Time         OFF
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```



```
Gain Up          ▶OFF
Tele Macro       ▶ON
Interval Timer   1min
Rec Time         1/2s
JLIP ID NO.      07
Tally            ON
Set Character
Date/Time

END :MENU KEY
```



If "Gain Up" or "Tele Macro" in the Menu has been changed from the factory settings, this mark appears in the viewfinder.

Using Menu For Detailed Adjustment

This camcorder is equipped with Program Manager, an easy-to-use, on-screen menu system that simplifies many of the more detailed camcorder settings.

1 SELECT MODE

Turn the PROGRAM AE select dial to any position except AUTO LOCK.

2 ACCESS MENU SCREEN

Press **MENU**.

3 SELECT FUNCTION

Press + or – to place the highlight bar on the desired function.

4 MAKE SETTING

The setting procedure depends on the function you select.

If you select Gain Up, Tele Macro, Interval Timer, Rec Time, JLIP ID NO. or Tally. . . .
.... press **FAR** or **NEAR** to cycle through the choices until the desired setting appears.

If you select Set Character or Date/Time, . . .
.... press **NEAR** to access the selection menu for each function (Set Character – ☞ pg. 25; Date/Time – ☞ pg. 7).

5 CLOSE MENU

Press **MENU**. The normal screen reappears.

NOTE:

The menu is available only in the Record-Standby mode.

MENU

Gain Up	▨ **NORM**	To record a subject in a dimly lit environment. When it is more convenient to shoot with a less coarse picture although the subject becomes slightly dark.
	▶ **OFF**	Allows you to shoot dark scenes with no picture brightness adjustment.
Tele Macro	▨ **OFF**	Usually set to this position.
	▶ **ON**	Usually the distance to a subject where the lens is in focus depends on the zoom magnification. Unless there is a distance more than 1m to the subject, the lens is out of focus at the maximum telephoto setting. When set to "ON", you can shoot a subject as large as possible at a distance of approx. 60 cm. • Depending on the zoom position, the lens may go out of focus.
Interval Timer	▨ **OFF** **15s** **30s** **1min** **5min**	This feature allows you to set the parameters for Self-Timer (☞ pg. 30) and Time-Lapse recording (☞ pg. 31).
Rec Time	▨ **OFF** **1/4s** **1/2s** **1s** **5s**	This feature allows you to set the parameters for Animation and Time-Lapse recording (☞ pg. 31).
JLIP ID NO.		This number is necessary when connecting the camcorder to a device such as a computer using the J terminal (JLIP). (☞ pg. 49) The numbers range from 01 to 99. Factory setting is 07.
Tally	▨ **ON**	The tally lamp comes on to signal the start of rcording.
	OFF	The tally lamp remains off at all times.
Set Character		Allows you to input characters. (☞ pg. 25).
Date/Time		Allows you to set the current date and time (☞ pg. 7).

▨ **= Factory setting and when the PROGRAM AE Select Dial is set to AUTO LOCK**

NOTE:

During shooting in low light, Auto Focus accuracy may decrease even when Gain Up is used. In this case, use Manual Focus (☞ pg. 19).

SECTION 1
DISASSEMBLY

1.1 SERVICE CAUTIONS

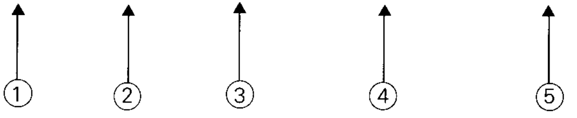
1.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. In general, chip parts such as resistor, shorting jumpers (0-ohm resistor), ceramic capacitors, diodes, etc. can not be reused after they were once removed.
4. When installing parts, be careful not to do with other parts as well as not to damage others.
5. When removing ICs, be careful not to damage circuit patterns.

1.1.2 How to read the disassembly and assembly

(For Cabinet Parts)

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	C1	(S1), 3(L1), (L2) PUSH BUTTON *CONNECTOR Ⓐ	<NOTE 1> <NOTE 2>
②	TOP COVER	C2	(S2), 4(L3)	–
③	FRONT COVER ASSEMBLY	C3	4(S2), 3(L4) JACK COVER *CONNECTOR Ⓑ	<NOTE 1> <NOTE 3>
④	MICROPHONE	C3	(S2)	–



① : Order of steps in Procedure
When reassembling, preform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

② : Part to be removed or installed.

③ : Fig. No. showing Procedure or Part Location.

C = Cabinet
CA = Camera
D = Deck

④ : Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.
6(S2) = 6 Screws (S2)

⑤ : Adjustment information for installation.

1.1.3 Connection of the wires

1. Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

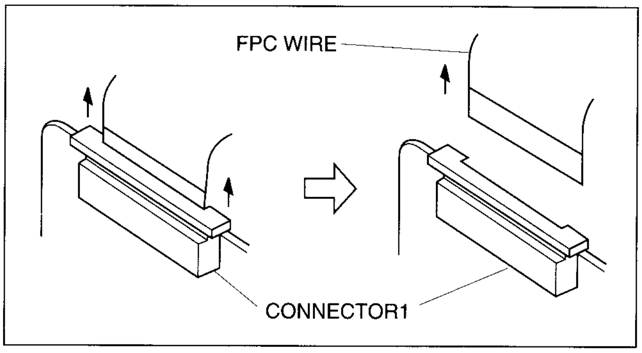


Fig. 1-1-1

2. Pull to unlock the connector cover when removing or inserting the flat wire cable.

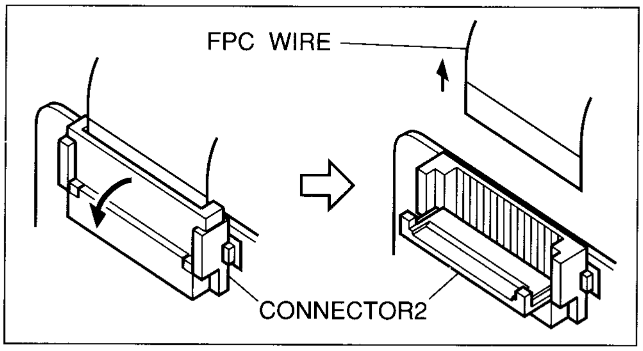


Fig. 1-1-2

1.1.4 Main screws to deal with disassembly/assembly

Table 1-1-1 lists screws by their symbols correspond to those shown in figures of this section "Disassembly".

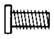
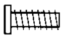
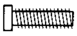
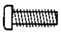
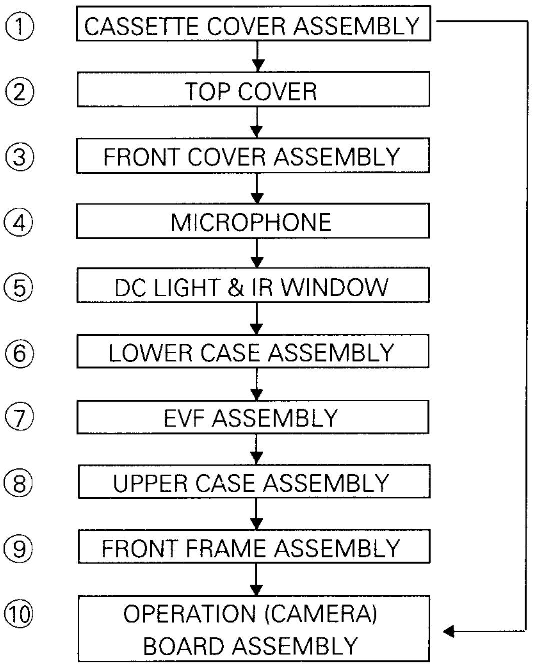
SYMBOL OF SCREW	SHAPE	PART NUMBER
S1		QYSLSP2060D
S2		QYSLSF2055D
S3		QYSLSG2080D
S4		QYSLSF1750D
S5		SPSH1725M
S6		QYTPSP2006Z
S7		QYSPSPU1740Z
S8		QYSPSPU1720M
S9		YQ44457-3
S10		SPSH1720M

Table 1-1-1

1.2 DISASSEMBLY/ASSEMBLY OF CABINET PARTS

1.2.1 Disassembly flow chart

This flowchart indicates the disassembly step for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.


① CASSETTE COVER ASSEMBLY
② TOP COVER
③ FRONT COVER ASSEMBLY
④ MICROPHONE
⑤ DC LIGHT & IR WINDOW
⑥ LOWER CASE ASSEMBLY
⑦ EVF ASSEMBLY
⑧ UPPER CASE ASSEMBLY
⑨ FRONT FRAME ASSEMBLY
⑩ OPERATION (CAMERA) BOARD ASSEMBLY

1.2.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	C1	(S1), 3(L1), (L2) PUSH BUTTON *CONNECTORⒶ	<NOTE 1> <NOTE 2>
②	TOP COVER	C2	(S2), 4(L3)	–
③	FRONT COVER ASSEMBLY	C3	4(S2), 3(L4) JACK COVER *CONNECTORⒷ	<NOTE 1> <NOTE 3>
④	MICROPHONE	C3	(S2)	–
⑤	DC LIGHT & IR WINDOW	C3	3(L5), 2 (L5)	–
⑥	LOWER CASE ASSEMBLY	C4	5(S2), 3(S3), (S4), 3(L6) *CONNECTORⒸ	<NOTE 1>
⑦	EVF ASSEMBLY	C4	2(L7)	<NOTE4>
⑧	UPPER CASE ASSEMBLY	C5	4(S2), 4(L8)	–
⑨	FRONT FRAME ASSEMBLY	C5	3(S5) SHIELD PLATE SHIELD COVER	<NOTE 5>
⑩	OPERATION (CAMERA) BOARD ASSEMBLY	C6	4(S2)	–

List of Abbreviations:
(S1) = 1 Screw (S1)
4(S2) = 4 Screws (S2)
3(L1) = 3 Locking Tabs (L1)

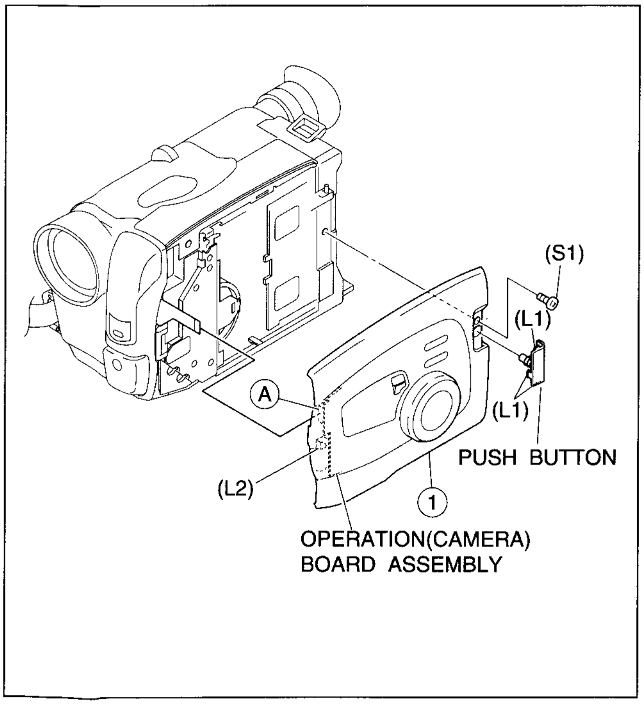

(S1)
(L1)
Ⓐ
(L1)
PUSH BUTTON
(L2)
①
OPERATION(CAMERA) BOARD ASSEMBLY

Fig. C1

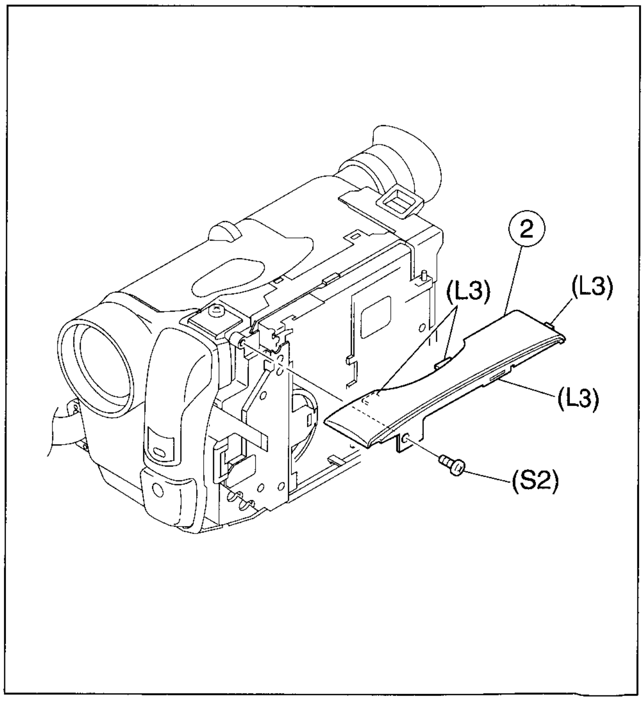


Fig. C2

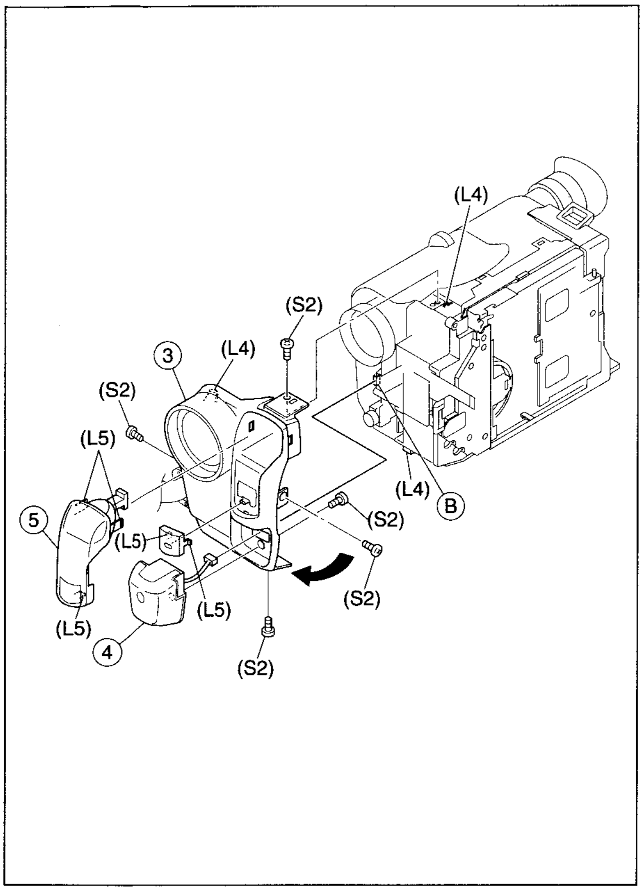

(L4)
(S2)
3
(L4)
(S2)
(L5)
5
(L5)
(L5)
(L4)
B
(S2)
(L5)
(S2)
4
(S2)

Fig. C3

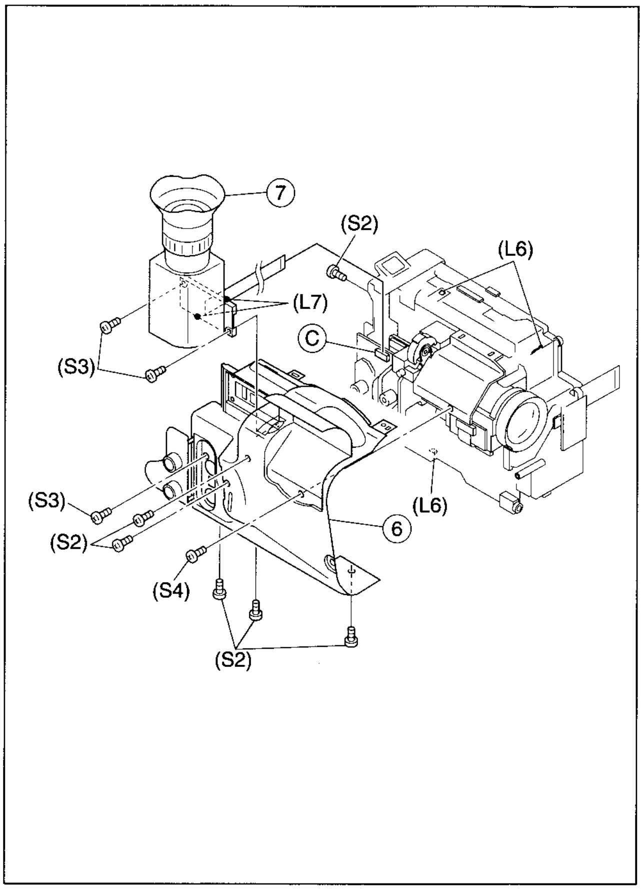

7
(S2)
(L6)
(L7)
(S3)
C
(S3)
(L6)
(S2)
6
(S4)
(S2)

Fig. C4

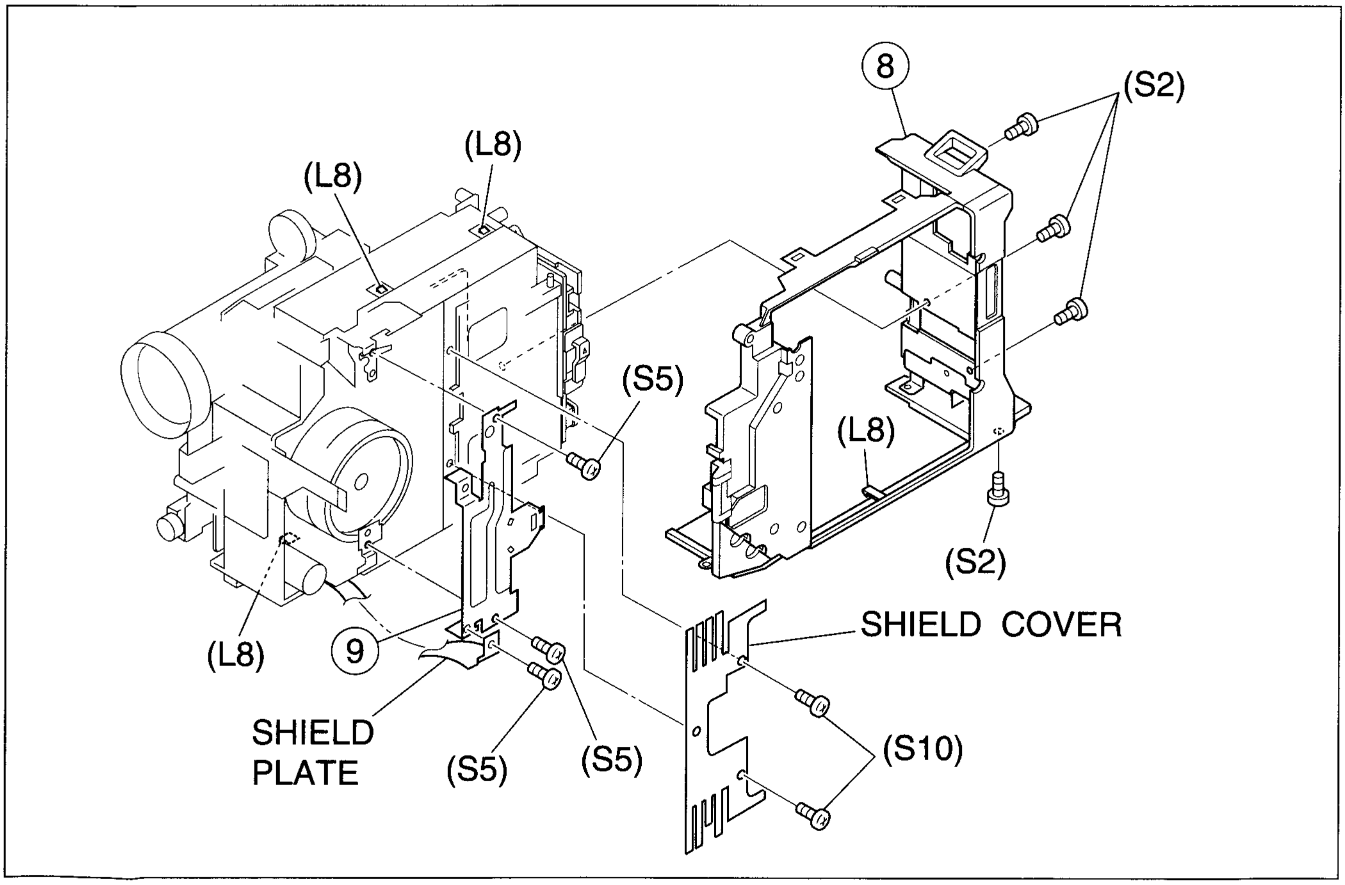

8
(S2)
(L8)
(L8)
(S5)
(L8)
(S2)
SHIELD COVER
(L8)
9
SHIELD PLATE
(S5)
(S5)
(S10)

Fig. C5

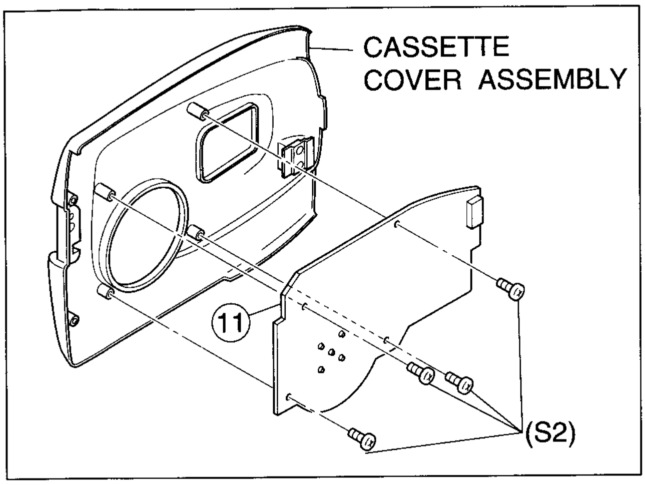


Fig. C6

Reference Notes:
<NOTE 1>
Destination of connectors

Note: ***Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.***

⟷ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	15	OPERATION (CAMERA) ⇔ PROCESS CN203
Ⓑ	7	MIC ↔ MIC AMP CN2201
Ⓒ	11	EVF ⇔ PROCESS CN206

<NOTE 2>
First disconnect connector Ⓐ , then remove the cassette cover assembly ⑪.

<NOTE 3>
First remove the grip strap, then remove the front cover assembly ③.

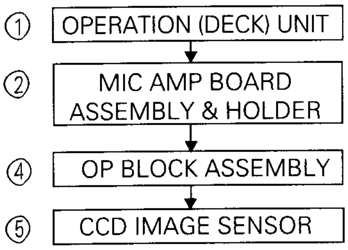
<NOTE 4>
- First remove the lower case assembly ⑥, then remove the E. VF assembly ⑦.
- In this case, be careful so as not to cause any damage to the wire.

<NOTE 5>
First remove the shield plate and the shield cover, then remove the front frame assembly ⑨.

1.3 DISASSEMBLY/ASSEMBLY OF CAMERA PARTS

1.3.1 Disassembly flow chart

This flowchart indicates the disassembly step for the CAMERA parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.



*Refer to section 1.6

1.3.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	OPERATION (DECK) UNIT	CA1	(S2), 3(L1) *CONNECTOR Ⓐ	<NOTE 1>
②	MIC AMP BOARD ASSEMBLY & HOLDER	CA1	(S2), (S3) *CONNECTOR Ⓑ	<NOTE 1>
③	OP BLOCK ASSEMBLY	CA1	(S2), (S3), 2(S6) *CONNECTORS Ⓒ,Ⓓ	<NOTE 1> <NOTE 2>

List of Abbreviations:
(S2) = 1 Screw (S2)
3(L1) = 3 Locking Tabs (L1)

Reference Notes:
<NOTE 1>
Destination of connectors

Note: ***Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.***

⟷ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	13	AV/MS CN105 ⇔ OPERATION (DECK)
Ⓑ	5	MIC AMP CN2202 ↔ AV/MS CN108
Ⓒ	22	OP BLOCK ⇔ PROCESS CN201
Ⓓ	14	OP BLOCK ⟷ CCD CN5001

<NOTE 2>
Move the CCD board in the direction of the rear side. At that time, pay careful attention to pins (connector Ⓓ) of the CCD image sensor so as not to damage them.

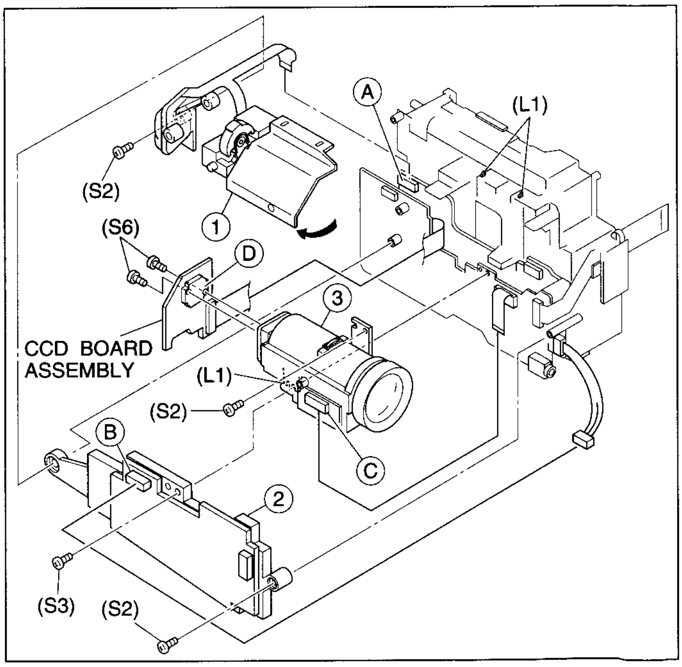
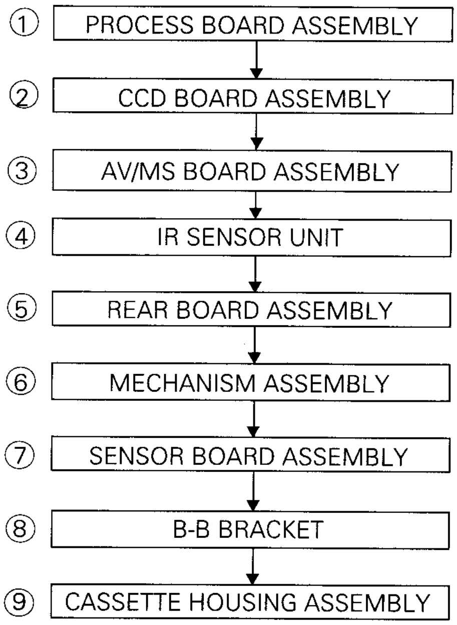


Fig. CA1

1.4 DISASSEMBLY/ASSEMBLY OF DECK PARTS

1.4.1 Disassembly flow chart

This flowchart indicates the disassembly step for the DECK parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.


① PROCESS BOARD ASSEMBLY
② CCD BOARD ASSEMBLY
③ AV/MS BOARD ASSEMBLY
④ IR SENSOR UNIT
⑤ REAR BOARD ASSEMBLY
⑥ MECHANISM ASSEMBLY
⑦ SENSOR BOARD ASSEMBLY
⑧ B-B BRACKET
⑨ CASSETTE HOUSING ASSEMBLY

1.4.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①/②	PROCESS/CCD BOARD ASSEMBLY	D1	(L1) *CONNECTOR Ⓐ,Ⓑ	<NOTE 1>
③	AV/MS BOARD ASSEMBLY	D1	2(S4), (L2) *CONNECTOR Ⓒ, Ⓓ, Ⓔ, Ⓕ	<NOTE 1>
④	IR SENSOR UNIT	D1	2(L3)	–
⑤	REAR BOARD ASSEMBLY	D1	2(L4) *CONNECTOR Ⓜ	<NOTE 1>
⑥	MECHANISM ASSEMBLY	D1	3(S4)	–
⑦	SENSOR BOARD ASSEMBLY	D1	4(S7), (S8) FRAME ASSEMBLY, *CONNECTORS Ⓖ,Ⓗ,Ⓙ,Ⓚ,Ⓛ	<NOTE 1> <NOTE 2>
⑧	B-B BRACKET	D1	(S7)	–
⑨	CASSETTE HOUSING ASSEMBLY	D2	4(S9)	–

List of Abbreviations:
2(S4) = 2 Screws (S4)
(L1) = 1 Locking Tab (L1)

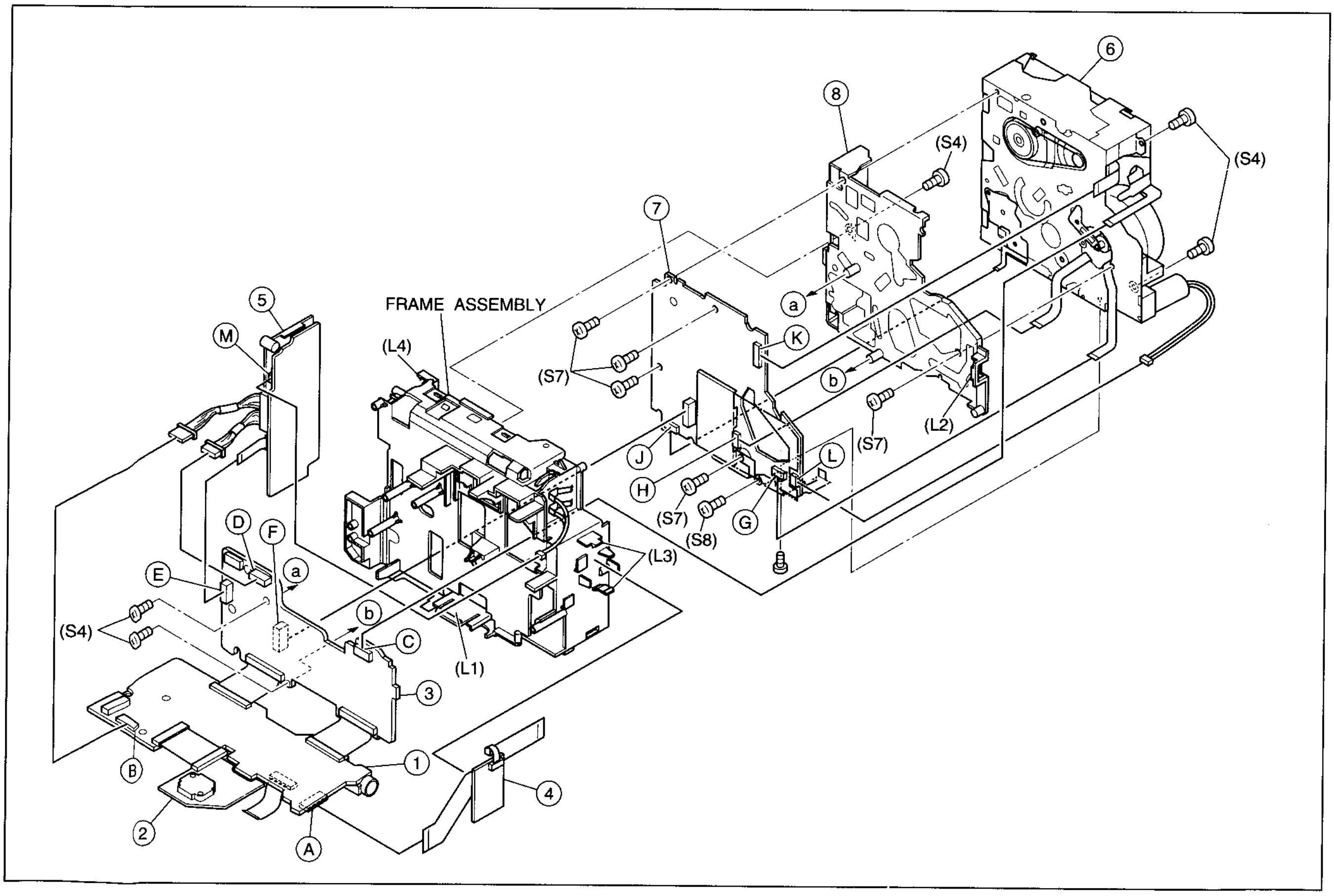

⑥
⑧
(S4)
(S4)
⑦
FRAME ASSEMBLY
⑤
Ⓜ
(L4)
(S7)
ⓐ
Ⓚ
ⓑ
(L2)
(S7)
Ⓙ
Ⓗ
Ⓛ
(S7)
(S8)
Ⓖ
Ⓓ
Ⓕ
ⓐ
Ⓔ
(L3)
(S4)
ⓑ
Ⓒ
③
(L1)
①
④
Ⓑ
②
Ⓐ

Fig. D1

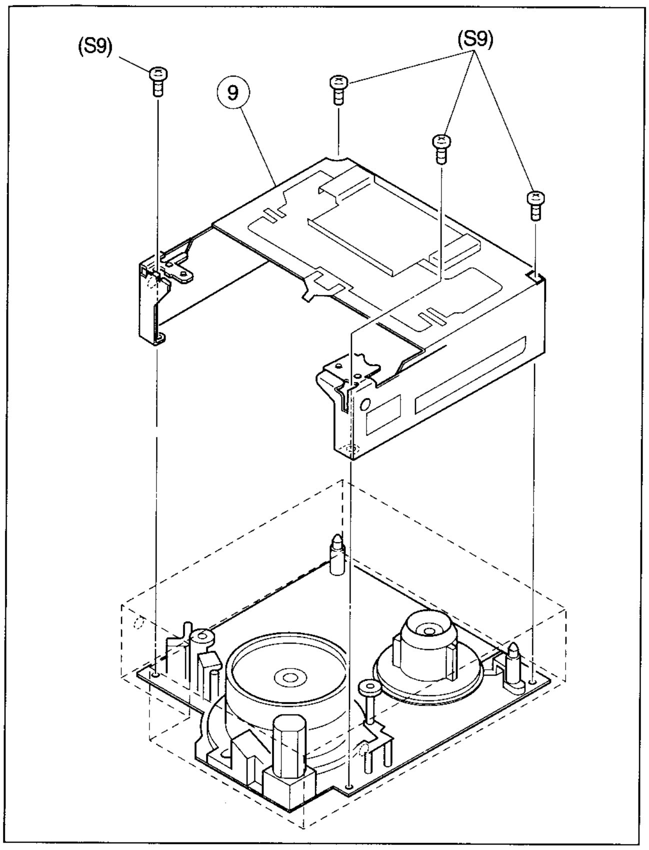


Fig. D2

Reference Notes:
<NOTE 1>
Destination of connectors

Note: ***Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.***

⬌ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector
Ⓐ	22	PROCESS CN203 ⇔ IR SENSOR UNIT
Ⓑ	7	PROCESS CN204 ↔ REAR CN601
Ⓒ	11	AV/MS CN107 ⬌ A/C HEAD
Ⓓ	7	AV/MS CN104 ↔ REAR CN601
Ⓔ	8	AV/MS CN106 ⇔ REAR CN602
Ⓕ	64	AV/MS CN101 ⬌ SENSOR CN6
Ⓖ	10	SENSOR CN1 ⇔ DRUM MOTOR
Ⓗ	20	SENSOR CN5 ⇔ VIDEO HEAD
Ⓙ	6	SENSOR CN2 ⇔ ROTARY ENCODER UNIT
Ⓚ	18	SENSOR CN3 ⇔ CAPSTAN MOTOR
Ⓛ	2	SENSOR CN4 ↔ LOADING MOTOR
Ⓜ	2	REAR CN603 ↔ DC LIGHT

<NOTE 2>
The center PWB should be mounted so carefully as not to cause any damage to the cassette switch.
In this case, this PWB should be mounted under the condition of "C. HOUSING UP" ([EJECT] mode).

1.5 TO TAKE OUT CASSETTE TAPE

In the event that the set enters the emergency mode as it is loaded with a cassette tape and the cassette tape cannot be ejected with the EJECT button, manually, take it out of the set according to the following procedure.

Note: ***If the mechanism comes into the unloading mode as the cassette tape is not held by hand, it results in tape damage.***

1. Disconnect the set from the power source.
2. Remove the push button and one screw (S1), open the cassette cover assembly and disconnect connector Ⓐ . (See Fig. C1 on page 1-2)
3. Remove the one screw (S2) then remove the top cover. (See Fig. C2 on page 1-2) In this case the shield cover is installed on the cassette housing assy, take out 2 screws then remove the shield cover.
4. Connect a jumper wire to each pole of the loading motor as shown by the magnified view ⓑ (Fig. 1-5-1).
5. While holding down the cassette housing by hand, connect the jumper wires to a battery to run the mechanism to the EJECT position four unloading. If this unloading operation is performed as the cassette housing is not held down by hand, the front lid of the cassette may damage the tape when it is ejected.
6. For taking in the slack of the tape, run the mechanism to the EJECT position as the front lid of the cassette is left open, and turn the take-up reel in the forward direction to wind up the tape. After confirming that the tape has completely been wound up and the supply reel is idling, take the cassette tape out of the cassette housing.

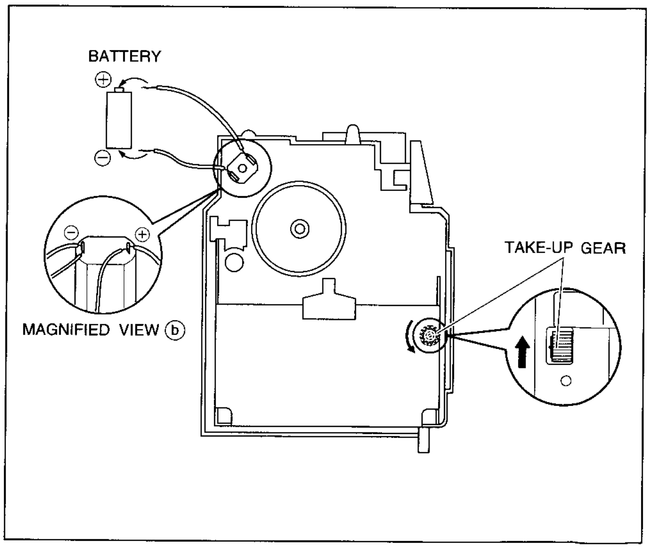


Fig. 1-5-1

1.6 REPLACEMENT OF CCD IMAGE SENSOR

Notes:

- *Pay the most careful attention to the transparent glass and optical LPF of the CCD image sensor so a not the soil and damage them. If something is soiled with finger-prints, etc., gently clean it with silicon-processed paper/cloth or chamois.*
- *When the CCD image sensor is shipped from the factory, there are protection seals applied onto the transparent glass. Leave the protector as it is, and take it off just before assembling the CCD image sensor to the OP block.*

1.6.1 Removal of CCD image sensor

1. Remove two screws Ⓐ securing the CCD base, and disassemble the CCD spacer, the optical LPF, spacer rubber.

1.6.2 Installation of new CCD image sensor

1. Remove the protection seal from a new CCD image sensor. Next, put the spacer rubber, optical LPF, CCD spacer on the CCD image sensor as they are piled up in this order. At that time, make sure of orientation of each item refering to the following table (see Fig. 1-6-1).

Part Name	Orientation
CCD image sensor	Mark is on the right viewed as indicated by the arrow ⓐ.
Spacer rubber	IC side is horizontal.
Optical LPF	Marks are on the left and bottom viewed as indicated by the arrow ⓐ.

2. Fix the CCD base to OP block with the two screws Ⓐ. At that time, be careful of the orientation.
3. After completion of all P.C. boards to the camera section, observe the monitor to confirm no vignetting caused by the bodytube, rings, lens hood, etc. If no vignetting is observed, it can be said that image's parallel, horizontality and centering are correct.

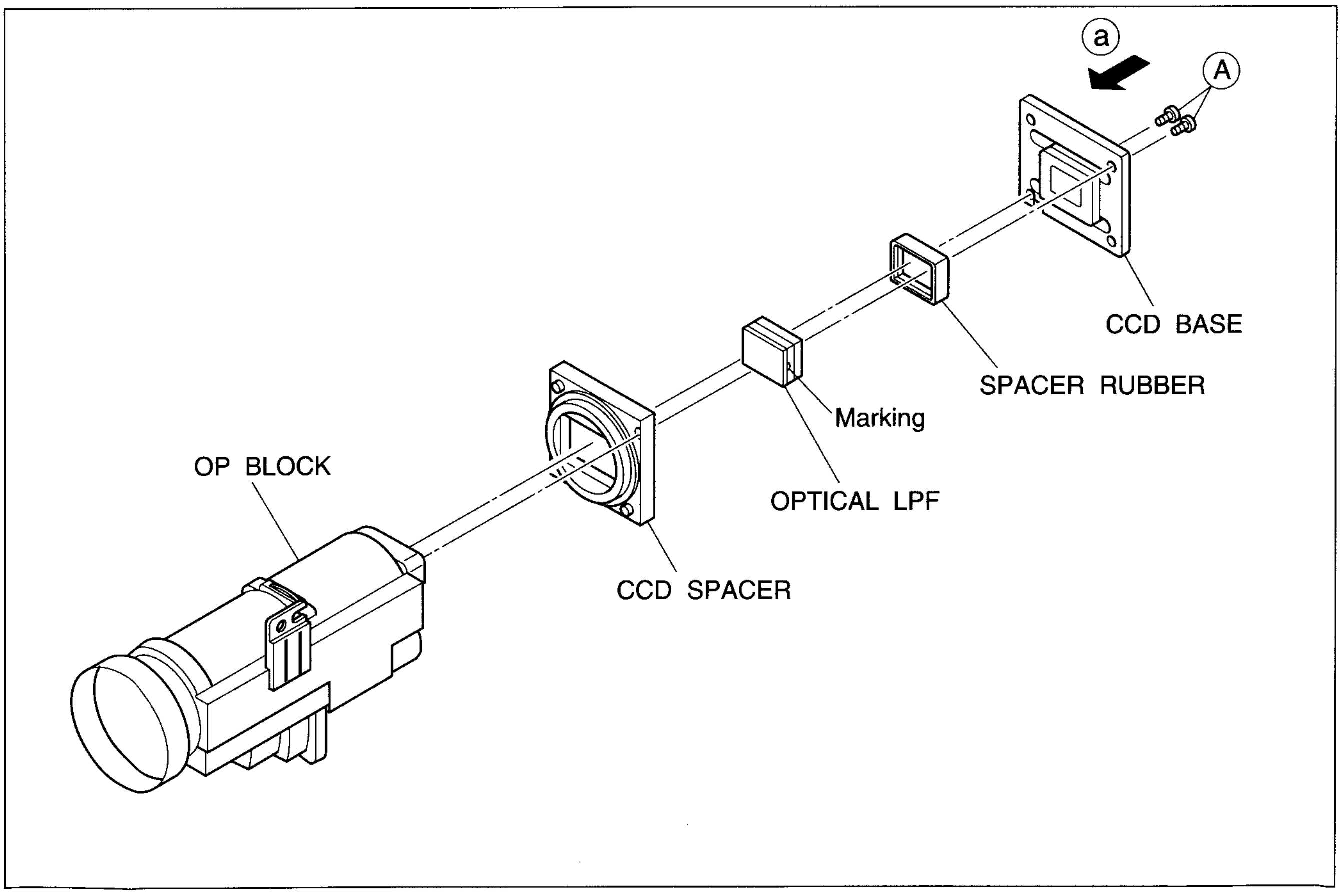


Fig. 1-6-1 CCD image sensor

1.7 EXTENSION CABLE CONNECTION

Connector	Pins	Connection	Part Number	Description
①	11	AV/MS CN107 ↔ A/C HEAD	YTU94077-11 YTU94074-11	–
②	7	MIC AMP CN2201 ↔ MIC	YUJ40095A-7	–
③	22	PROCESS CN203 ↔ IR SENSOR UNIT	YTU94077-22 YTU94074-22	–
④	22	PROCESS CN201 ↔ OP BLOCK	YTU94077-22 YTU94074-22	–
⑤	11	PROCESS CN206 ↔ E. VF	YTU94077-11 YTU94074-11	–
⑥	8	AV/MS CN106 ↔ REAR CN602	YTU94077-8 YTU94074-88	–
⑦	7	AV/MS CN104 ↔ REAR CN601	YUJ40095A-7	–
⑧	13	AV/MS CN105 ↔ OPERATION (DECK) UNIT	YTU94077-13 YTU94074-13	–
⑨	64	AV/MS CN101 ↔ SENSOR CN6	PEMCJ1220-064	–

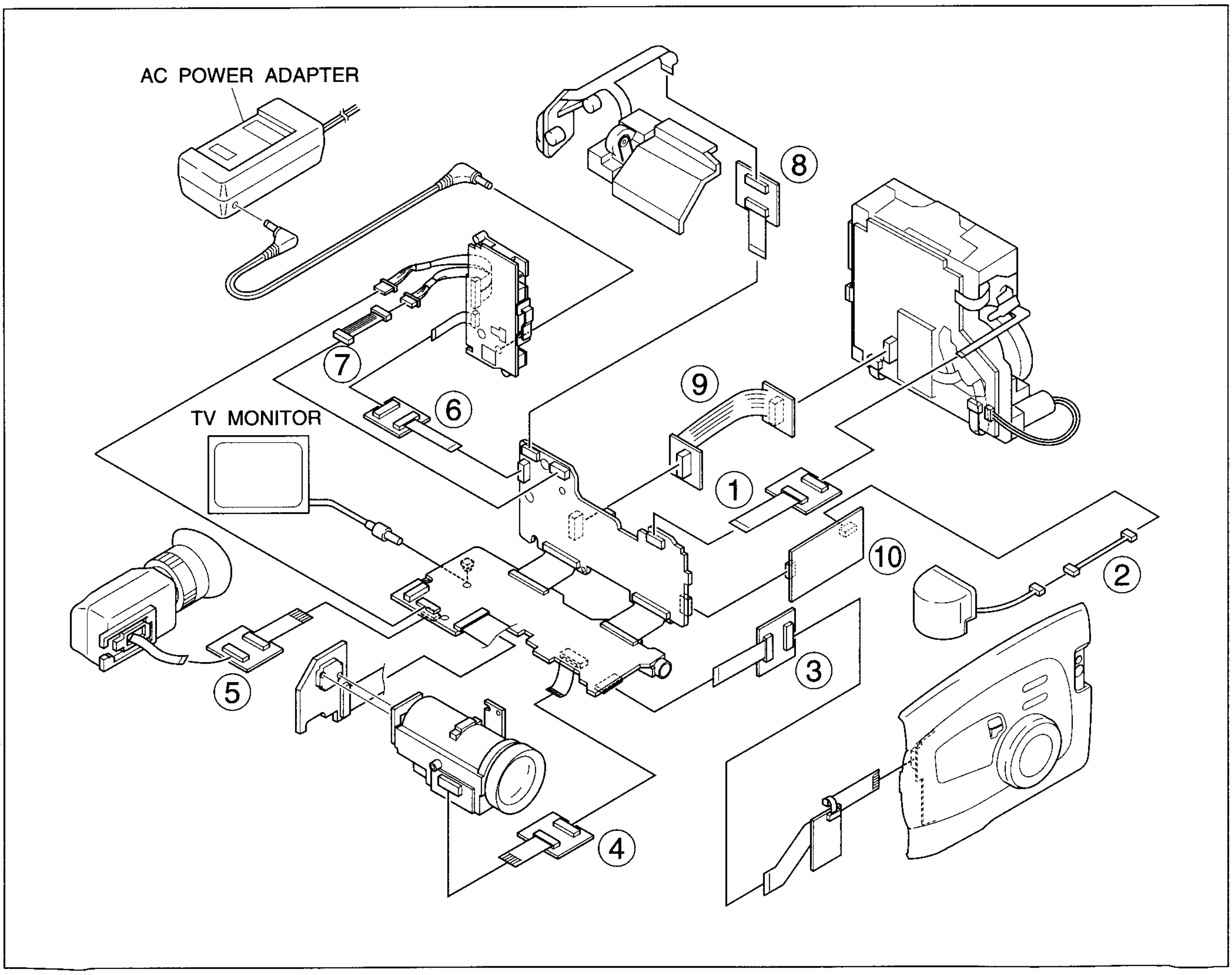


Fig. 1-7-1 EXTENSION CABLE CONNECTION

SECTION 2
MECHANISM ADJUSTMENT

2.1 SERVICE CAUTIONS

2.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. When installing parts, be careful not to do with other parts as well as not to damage others. (Pay the most careful attention to the upper drum assy and tape transport mechanism.)

2.1.2 How to read the disassembly and assembly (For Mechanism Parts)

①: Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

②: Part to be removed or installed.

③: Location of part.
T = Top
B = Bottom

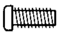
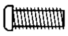
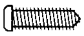
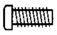
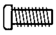
④: Fig. No. showing Procedure or Part Location.
M = Mechanism

⑤: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.

⑥: Adjustment information for installation.
(+) = Refer to Exploded Views for Lubrication information.

2.1.3 Main screws and washers to deal with disassembly/assembly

Table 2-1-1 lists screws and washers by their symbols which correspond to those shown in figures of this section "Disassemby and Assembly".

SYMBOL OF SCREW	SHAPE	PART NUMBER
S1		YQ44457
S2		YQ44457-3
S3		YQ44457-2
S4		SPSN1750Z
S5		YQ44304
S6		YQ44460
S7		SPSH1730C
S8		SPSH1740Z
S9		YQ44457-5
S10		SPSH1730M

SYMBOL OF WASHER	SHAPE	PART NUMBER
W1		PQM30017-27
W2		Q03093-835
W3		PQM30017-25

Table 2-1-1

(For Mechanism Parts)

STEP/LOC. No.	PART		Fig. No.	REMOVAL	INSTALLATION
				*UNHOOK/UNLOCK /RELEASE/UNPLUG /UNSOLDER	ADJUSTMENT CONDITION NOTE
①	ROLLER BASE ASSEMBLY	T	M1	(S1)	-
②	TENSION ARM ASSEMBLY	T	M1	(P1), (W1)	-
③	REEL DISK (SUP)	T	M1	(W1), (W2)	-
④	SLANT ARM ASSEMBLY	T	M1	(W1)	-
⑤	CANCEL LEVER ASSEMBLY	T	M2	(W1)	-
⑥	EJECT LEVER ASSEMBLY	T	M2	(W1)	-
⑦	CASSETTE GUIDE (L) ASSEMBLY	T	M2	(S1)	-

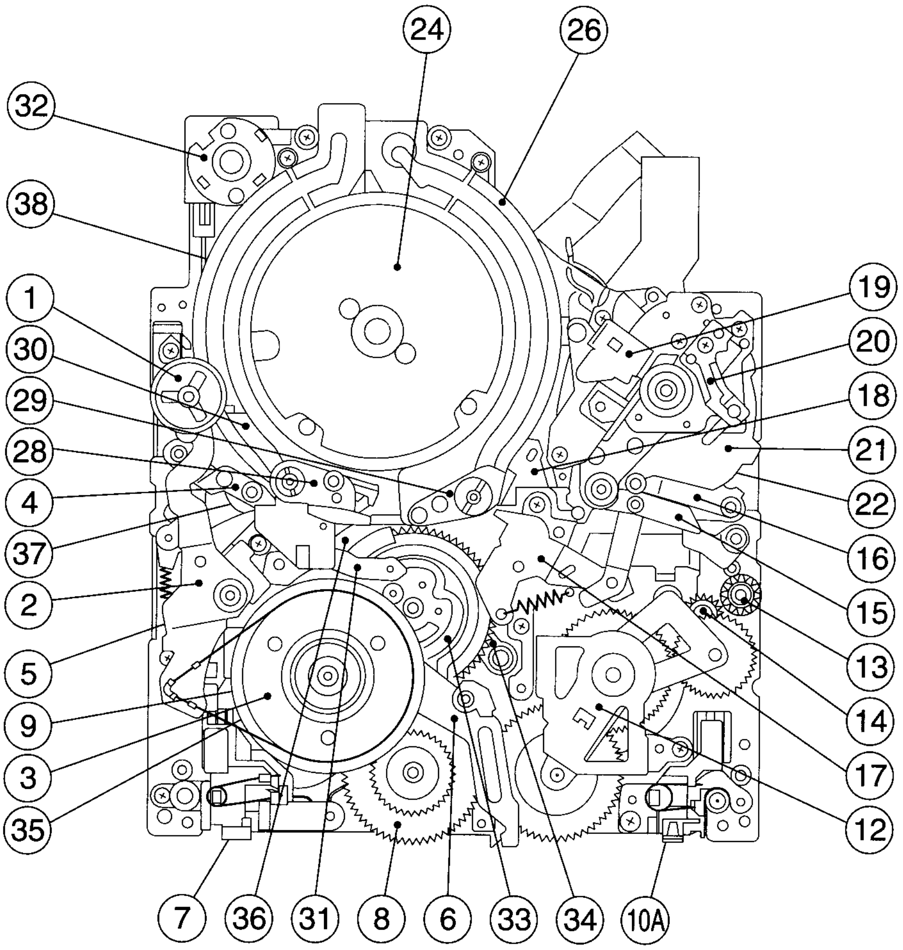
↑ ① ↑ ② ↑ ③ ↑ ④ ↑ ⑤ ↑ ⑥

2.2 DISASSEMBLY/ASSEMBLY OF MECHANISM PARTS

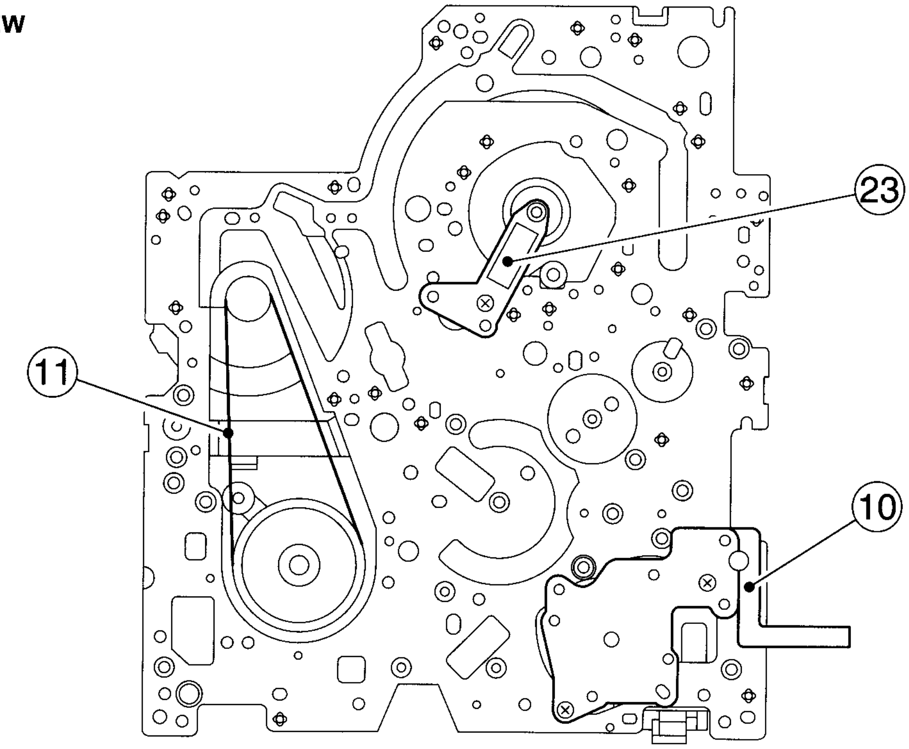
This procedure starts with the condition that the cabinet parts and deck parts. Also, all the following procedures for adjustment and parts replacement should be performed in STOP mode. When reassembling, perform the step(s) in the reverse order.

STEP/LOC. No.	PART		Fig. No.	REMOVAL	INSTALLATION
				*UNHOOK/UNLOCK /RELEASE/UNPLUG /UNSOLDER	ADJUSTMENT CONDITION NOTE
①	ROLLER BASE ASSEMBLY	T	M1	(S1)	–
②	TENSION ARM ASSEMBLY	T	M1	(P1), (W1)	–
③	REEL DISK (SUP)	T	M1	(W1), (W2)	–
④	SLANT ARM ASSEMBLY	T	M1	(W1)	–
⑤	CANCEL LEVER ASSEMBLY	T	M2	(W1)	–
⑥	EJECT LEVER ASSEMBLY	T	M2	(W1)	–
⑦	CASSETTE GUIDE (L) ASSEMBLY	T	M2	(S1)	–
⑧	SUPPLY CLUTCH ASSEMBLY	T	M2	(W1)	–
⑨	WHEEL GEAR	T	M2	(W1)	See, Adjustment procedure for Section 2.4
⑩	ROTARY ENCODER	B	M3	2(S10)	–
(10A)	CASS. GUIDE(R) ASSEMBLY	T	M3	(S1)	–
⑪	TIMING BELT	B	M3	–	–
⑫	CENTER PULLEY UNIT	T/B	M3	2(S3)	–
⑬	TU GEAR	T	M3	(W1)	–
⑭	BRAKE SUB GEAR	T	M3	(W1)	–
⑮	P.R ARM ASSEMBLY	T	M3	(W3)	–
⑯	TU GUIDE ARM ASSEMBLY	T	M3	(W1)	–
⑰	LINK ARM ASSEMBLY	T	M4	(W3)	–
⑱	LED GUIDE	T	M4	(S1)	–
⑲	A/C HEAD UNIT	T	M4	2(S4)	–
⑳	SLANT POLE BASE ASSEMBLY	T	M5	(S5)	–
㉑	CAP MOTOR ASSEMBLY	T	M5	3(S5)	–
(22A)	MOTOR BASE	T	M5	2(S1), (S6)	–
(22B)	CLEANER ASSEMBLY	T/B	M5	2(S2), (L1)	
㉓	BRUSH	B	M6	(S2)	–
㉔	DRUM FINAL	T/B	M6	2(S1), 2(S8), *CATCHER	–
㉖	GUIDE RAIL	T	M6	2(S7), 6(S9)	–
㉘	POLE BASE (SUP)	T	M6	–	–
㉙	POLE BASE (TU)	T	M6	–	–
㉚	COVER PLATE	T	M7	–	–
㉛	DRIVE LEVER ASSEMBLY	T	M7	–	–
㉜	MOTOR BRACKET ASSEMBLY	T	M7	3(S1)	–
㉝	CONTROL CAM	T	M8	(W3)	See, Adjustment procedure for Section 2.4
㉞	LINK LEVER	T	M8	–	–
㉟	MIDDLE GEAR	T	M8	–	–
㊱	LOADING GEAR(T) ASSEMBLY	T	M8	(W1)	See, Adjustment procedure for Section 2.4
㊲	LOADING GEAR(S) ASSEMBLY	T	M8	(W1)	–
㊳	LOADING RING ASSEMBLY	T	M8	4(S1)	See, Adjustment procedure for Section 2.4

TOP VIEW


24
26
32
38
1
30
29
28
4
37
2
5
9
3
35
19
20
18
21
22
16
15
13
14
17
12
7
36
31
8
6
33
34
10A

BOTTOM VIEW



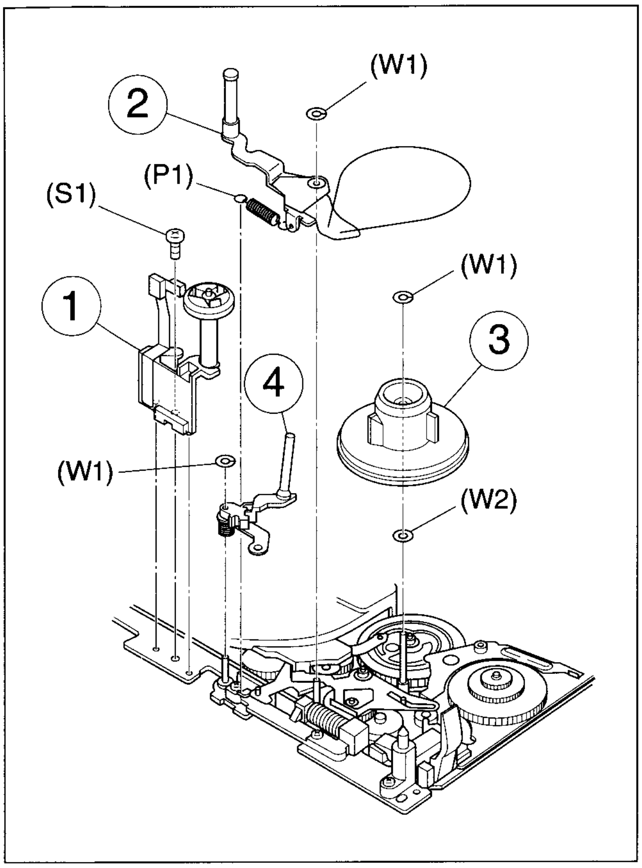

(W1)
2
(P1)
(S1)
(W1)
3
1
4
(W1)
(W2)

Fig. M1

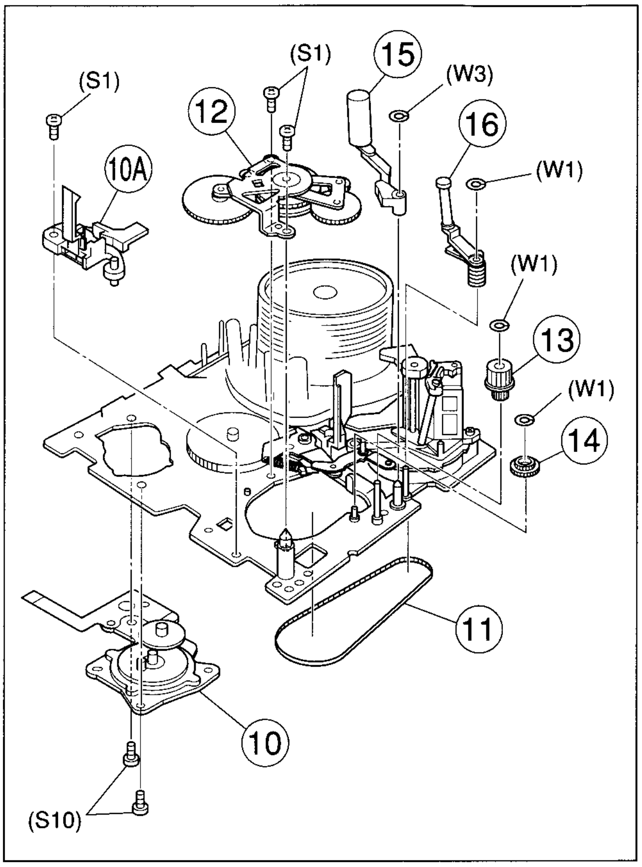

(S1)
15
(W3)
(S1)
12
16
10A
(W1)
(W1)
13
(W1)
14
11
10
(S10)

Fig. M3

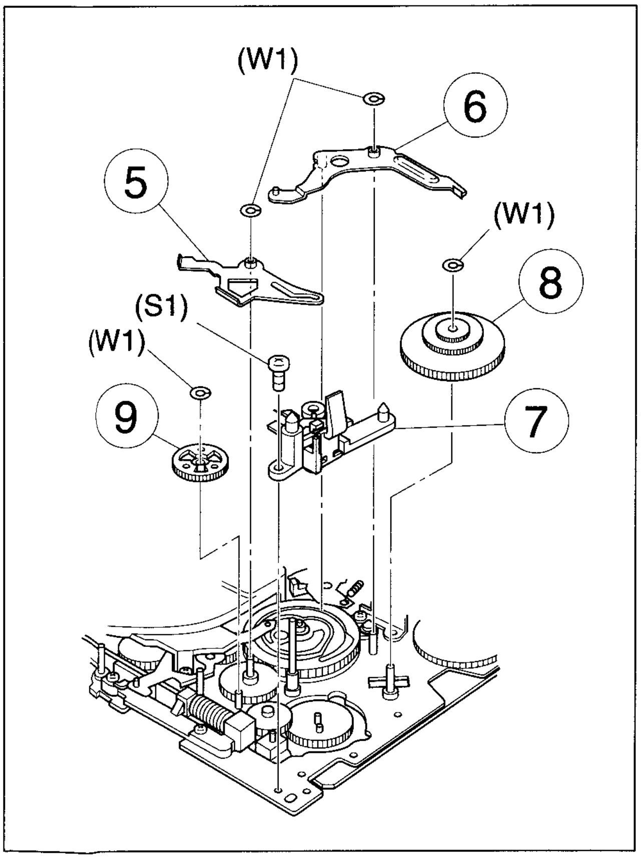

(W1)
6
5
(W1)
8
(S1)
(W1)
9
7

Fig. M2

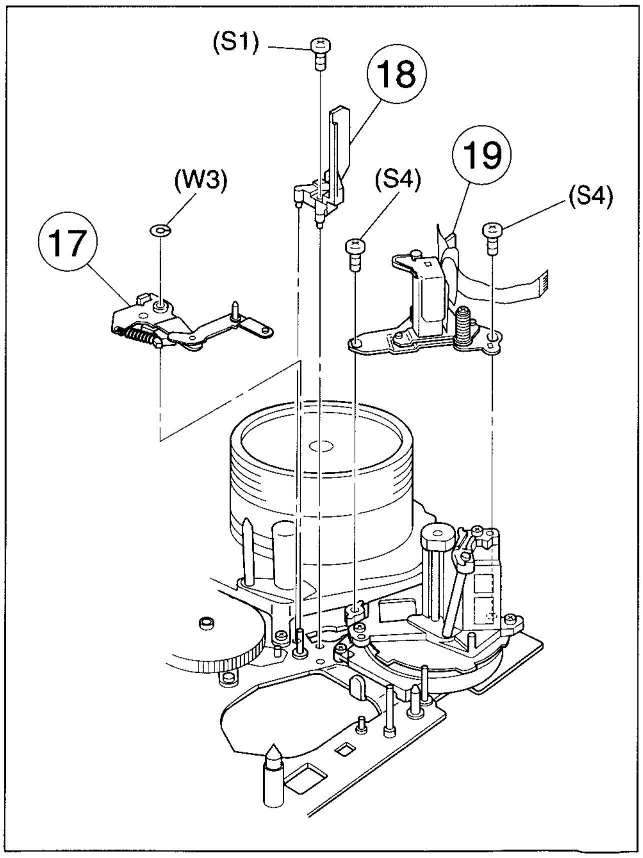

(S1)
18
19
(W3)
(S4)
(S4)
17

Fig. M4

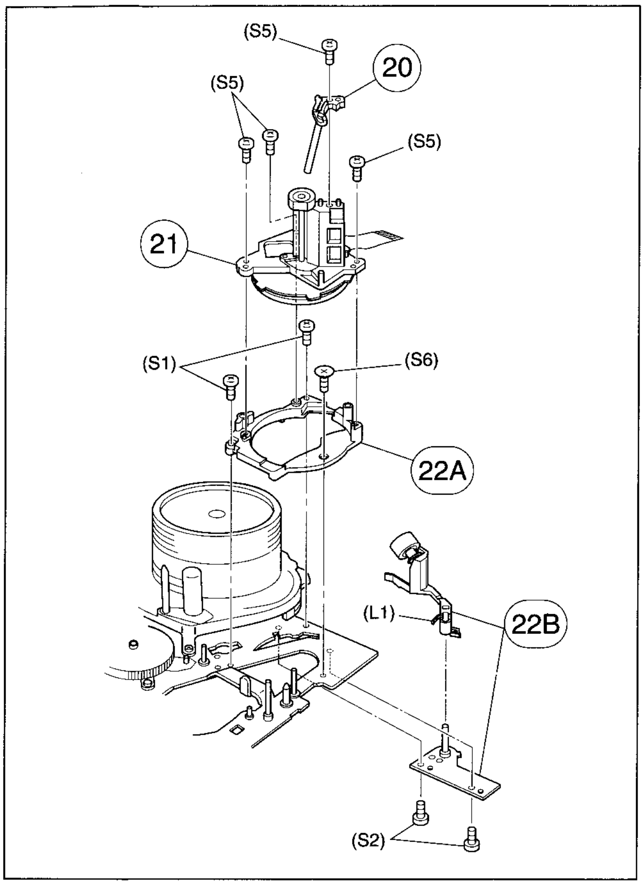

(S5)
(S5)
20
(S5)
21
(S1)
(S6)
22A
(L1)
22B
(S2)

Fig. M5

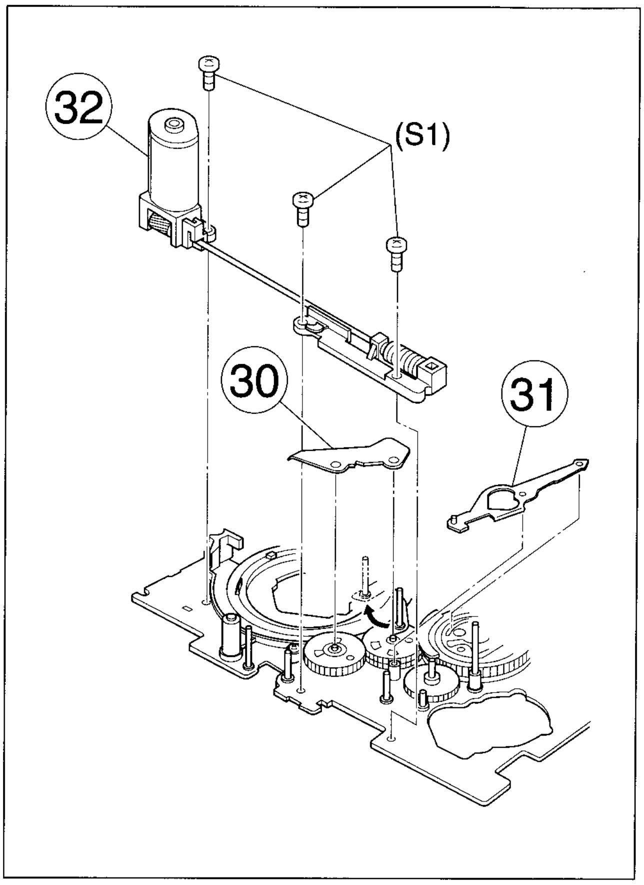


Fig. M7

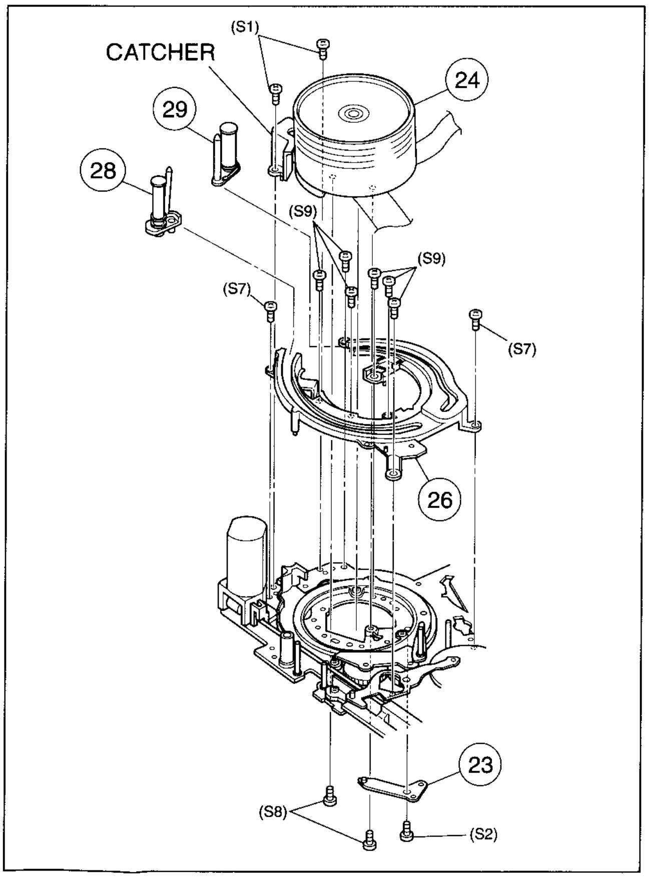

(S1)
CATCHER
24
29
28
(S9)
(S9)
(S7)
(S7)
26
23
(S8)
(S2)

Fig. M6

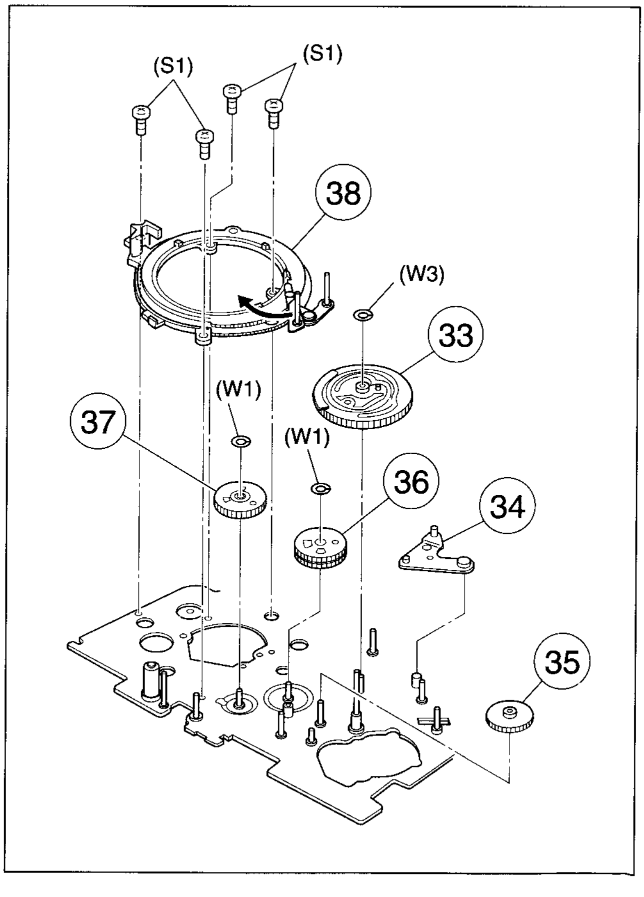

(S1)
(S1)
38
(W3)
33
(W1)
37
(W1)
36
34
35

Fig. M8

2.3 REPLACEMENT OF UPPER DRUM

Note: *Be very careful not to touch any hand of a new upper drum as well as not to damage the drum.*

2.3.1 Removal of upper drum

1. Carefully unsolder at 18 points shown in Fig. 2-3-1 on the UPPER DRUM board.

   Note: *If solder is not completely removed, it may cause damage of the head pins when the upper drum is removed.*

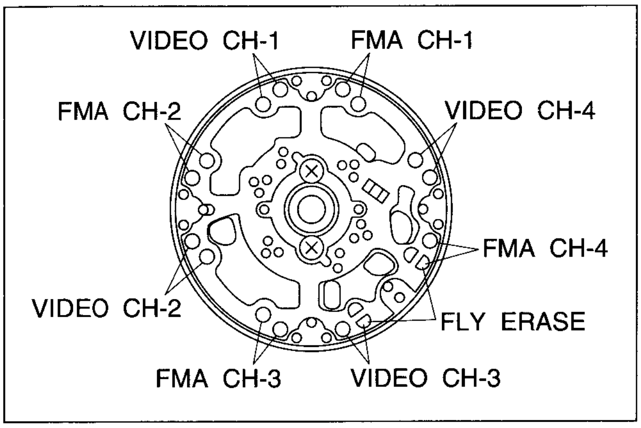

VIDEO CH-1
FMA CH-1
FMA CH-2
VIDEO CH-4
FMA CH-4
VIDEO CH-2
FLY ERASE
FMA CH-3
VIDEO CH-3

Fig. 2-3-1 Upper drum replacement (1)

2. Remove two screws and draw out the upper drum in the direction of the arrow.

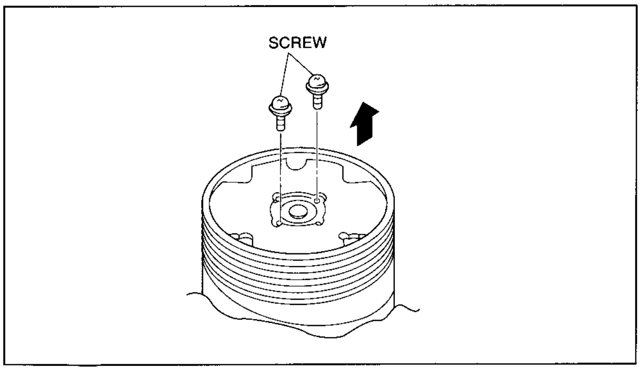


Fig. 2-3-2 Upper drum replacement (2)

3. When it is hard to remove the upper drum, set the upper drum removal tool (YTU94031A) with the screws which are once removed in the step 2, and tighten the center screw to remove it easily.

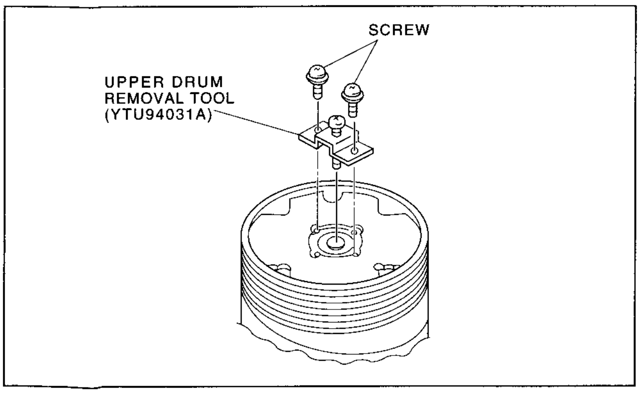

SCREW
UPPER DRUM
REMOVAL TOOL
(YTU94031A)

Fig. 2-3-3 Upper drum replacement (3)

2.3.2 Installation of new upper drum

1. Before installing a new upper drum, insert a soldering iron (50 W) into the hole of the upper drum and heat it for about 3 to 5 minutes to expand it.

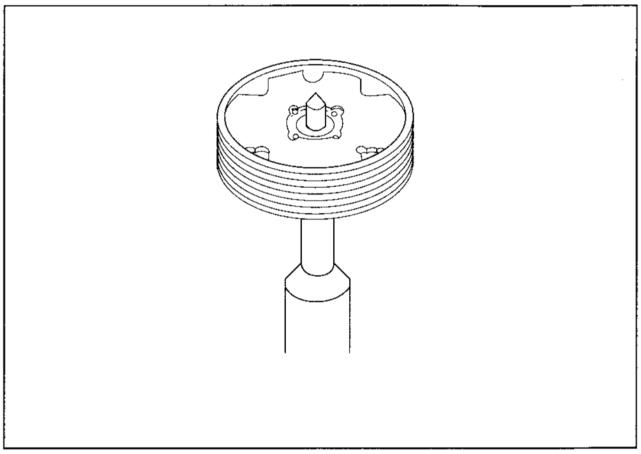


Fig. 2-3-4 Upper drum replacement (4)

2. Install the new upper drum so that its arrow marking (red relay pin) should be aligned to the rotary transformer's marking of the lower drum.

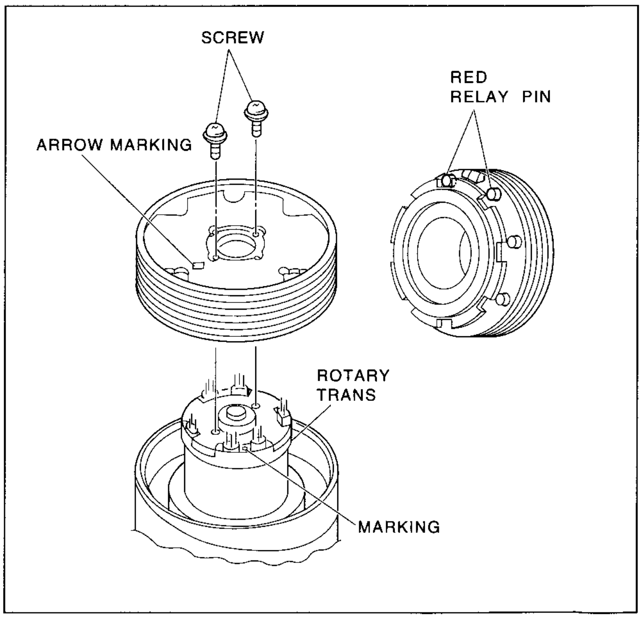
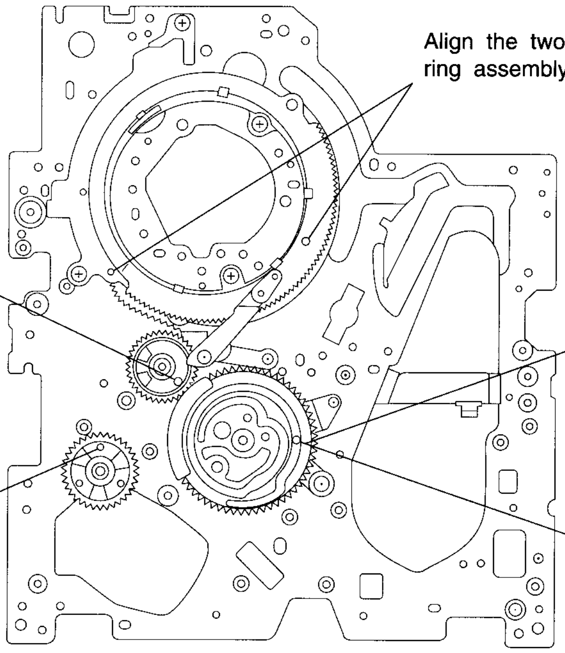

SCREW
RED
RELAY PIN
ARROW MARKING
ROTARY
TRANS
MARKING

Fig. 2-3-5 Upper drum replacement (5)

3. Tighten the screws lightly first, then, alternately tighten them gradually as the upper drum is cooled.
4. After replacement finishes, make sure to check up and deck section adjustment.

2.4 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

Note: *Pay careful attention to the installing order and phase of mechanism parts of the loading system.*



Align the two holes of the Loading ring assembly to those of the deck.

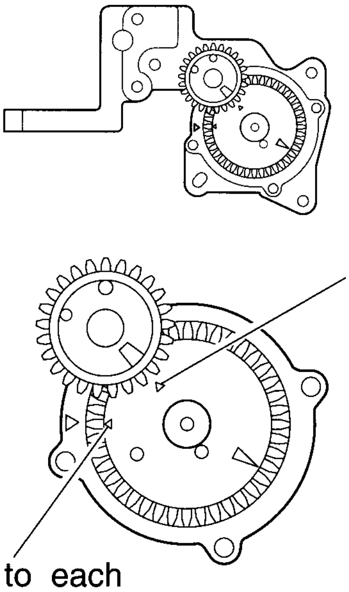
Align the hole of the Loading gear (T) assembly to that of the deck.

Align the hole of the link lever assembly to the deck hole.

Align one of the three holes of wheel gear to the deck hole.

Align each one link lever assembly hole and deck hole to the hole at the control cam position.

Fig. 2-4-1 TOP OF MAIN DECK



Align this part to each "Triangle" mark.

Align this part to each "Triangle" mark.

Fig. 2-4-2 ROTARY ENCODER

2.5 TAPE TRANSPORT ADJUSTMENT

In most cases the deck section is in need electrical adjustment, it results from replacement of worm mechanical parts or video heads. In the event of malfunction with electrical circuits, troubleshouting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

2.5.1 Required adjustment tools

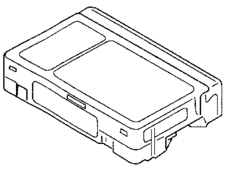
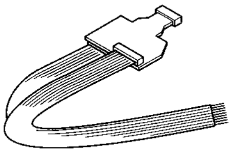
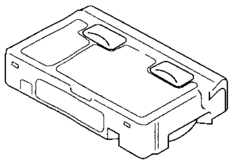
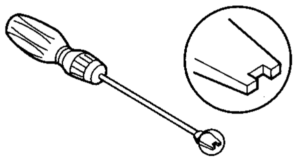
Alignment tape for SP/LP interchangeability MHPE-C: SP	PATCH CORD YTU93082A
	
Cassette torque meter PUJ50431-2	Roller driver PTU94002
	

Table 2-5-1

2.5.2 Back tension

1. Set a cassette torque meter onto the deck and measure the back tension in standard REC mode to confirm that the back tension is 9.5 – 17.5 gf•cm.
2. If not, replace the tension band.
   When the value widely fluctuates in the measurement, replace the supply reel disk.
3. With the cassette torque meter, confirm that the play torque is 15 – 25 gf•cm.
   If necessary, replace the centre pully unit.

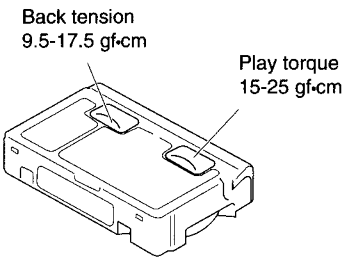


Fig. 2-5-1 Cassette torque meter

2.5.3 Tape pattern

1. Remove the one screw Ⓐ and remove the connector cover Ⓑ of the upper case assembly as shown on Fig. 2-7-1 (Page 2-11).
2. Connect the patch cord (YTU93082A) to CN207 on the PROCESS board.
3. Observe signal at pin 3 of CN1 (V. TP FM) with external trigger from pin 6 of CN1 (V. FF) on the patch cord.
4. Play back the SP stairstep signal of the alignment tape, and maximize the FM waveform by the tracking button.
5. Set the tracking control to the center position by simultaneously pressing the tracking (-) and (+) buttons and maximize the FM waveform by the tracking button.
6. If the observed FM waveform is not flat, adjust the height of the supply of take-up guide roller with the roller driver (PTU94002).

   Note: *To prevent the tape from damage, turn the guide rollers slowly.*

7. By operating the tracking button (both in + and – directions) in the manual tracking mode, vary the output level of the FM waveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape.
8. When the FM waveform breaks in the level varying process, subtly adjust the height of guide rollers at every breaking point so that the waveform varies as flat as possible.
   Repeat the above steps 6. and 7. several times to confirm that the waveform is flat as a whole.
9. Record the signal and play it back in the SP mode, and confirm that the FM waveform is flat in SP mode.

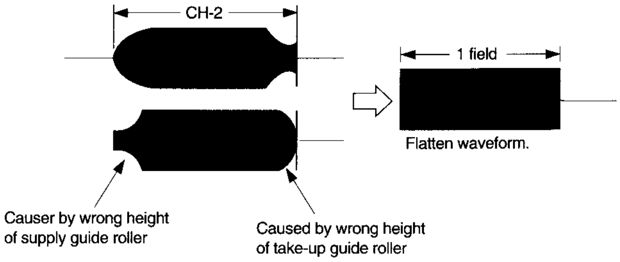


Fig. 2-5-2 FM waveform-1

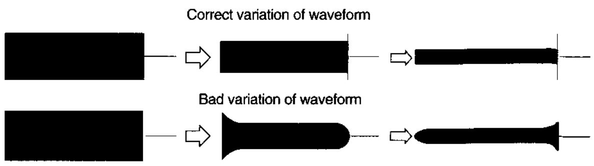


Fig. 2-5-3 FM waveform-2

11. Through the above steps, confirm that there occur no wrinkling and damage in the tape around the pinch roller and TU guide pole whenever the deck is in operation of Loading/Unloading, Search Rewind and at mode change from Search Rewind to play mode. If wrinkling or damage in the tape occurs around the TU guide pole, adjust the angle (slant) of the A/C head to the tape. So that the tape normally runs along the lower flange of the guide pole.

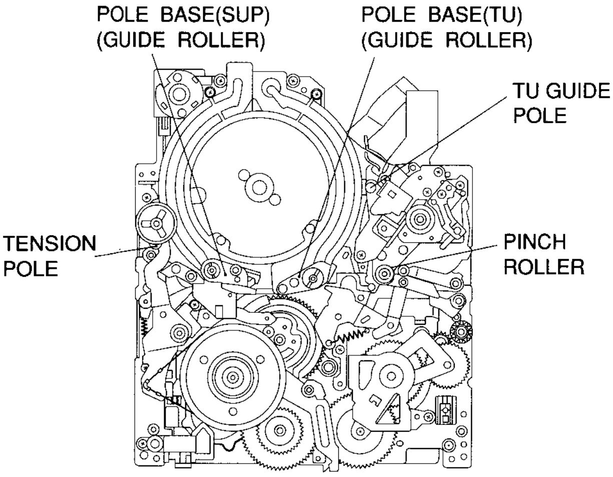

POLE BASE(SUP)
(GUIDE ROLLER)
POLE BASE(TU)
(GUIDE ROLLER)
TU GUIDE
POLE
TENSION
POLE
PINCH
ROLLER

Fig. 2-5-4 Tape transport system

2.5.4 A/CTL head height & azimuth

1. Connect the patch cord (YTU93082A) to CN207 on the PROCESS board.
2. Connect the channel-1 scope probe to the audio output and connect the channel-2 scope probe to CN1 pin 8 on the patch cord.
3. Set the tracking to its center range by pressing the (+) and (–) tracking controls simultaneously.
4. Adjust screws Ⓐ, Ⓑ and Ⓒ approximately 45 degrees in the same direction to obtain maximum audio output and CTL signal levels.
5. As a final fine adjustment, adjust screw Ⓑ for minimum signal level fluctuation and screw Ⓒ for maximum output signal level.

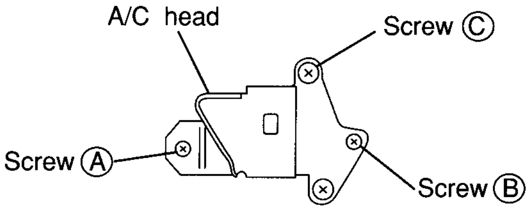

A/C head
Screw Ⓒ
Screw Ⓐ
Screw Ⓑ

Fig. 2-5-5 A/C head

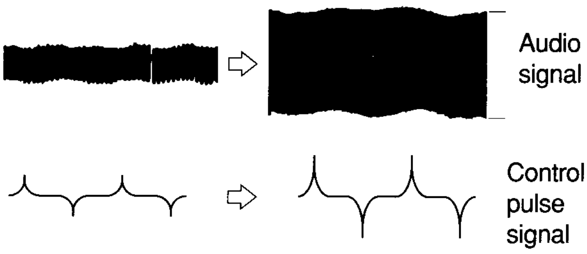


Fig. 2-5-6 Audio and CTL signal

2.5.5 Phase of control head (X value)

1. Connect the patch cord (YTU93082A) to CN207 on the PROCESS board.
2. Play back the SP stairstep signal of the alignment tape and observe signal at pin 3 of CN1 (V.TP FM) with external trigger from pin 6 of CN1 (V.FF) on the patch cord.
3. Operate the tracking button in the center and manual tracking mode by pressing the tracking (+) and (–) buttons and confirm that the FM output level is maximum at the center position as shown in Fig. 2-5-8.
4. If necessary, slightly loosen the setscrews Ⓓ and Ⓔ and insert the Tweezers into the notch and guide hole to move the A/C head fully in the direction of the capstan to the extent.
5. Gradually move the A/C head toward the drum to find the position where the FM output level maximum for the first time (a' – b' in Fig. 2-5-8).
6. Fine adjust the phase of the A/C head and tighten the screwsⒹ and Ⓔ at the point a.

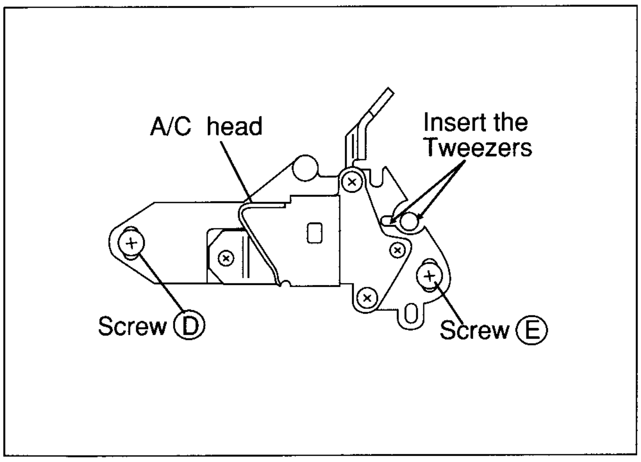


Fig. 2-5-7 Phase of control head

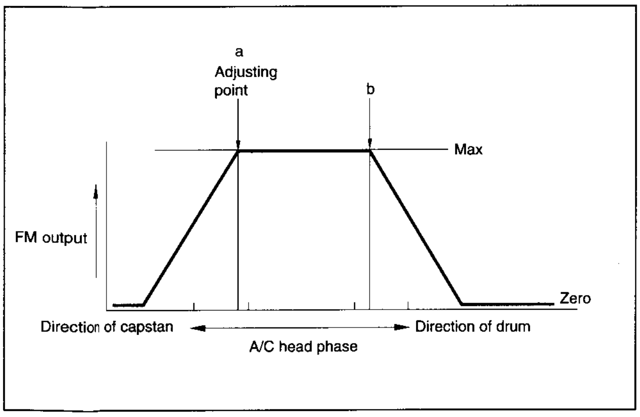


Fig. 2-5-8 Phase adjustment point of control head

2.6 REMARKS

2.6.1 Cleaning

1. For cleaning of the upper drum (particularly video heads), use fine-woven cotton cloth or Kimwipe with alcohol soaks through. Do not move the cloth but turn the upper drum counterclockwise.

   Note: ***Make sure not to move the cloth in the vertical direction to the video head, since it may cause damage of the video heads.***

2. For cleaning of parts of the tape transport system except the upper drum, use fine-woven cotton cloth or cotton swab soaked alcohol.
3. After cleaning, confirm that the cleaned parts are completely dry before loading the deck with cassette tape.

2.6.2 Applying oil and grease

1. Periodical oiling and greasing are not required but should be done to new parts when replacing. If oil and grease on the other parts of the other party are old and dirty, wipe them clean and apply new oil or grease.
2. For parts and points to apply oil and grease, refer to the exploded view of the mechanism assembly (M3). Table 2-6-1 specifies oil and grease to be used.
3. When oiling, clean the objective parts with alcohol first and apply one or two drop(s) of oil. Too much oiling causes rotary parts to slip because of oil leakage.

Classification	Name	Part No.	Symbol in drawing
Grease	Grease	KYODO-SH-P	AA
Oil	Cosmo Hydro HV100	YTU94027	BB

Table 2-6-1 Specific oil and grease to be used

2.6.3 Checkup

After replacement of the supply reel disk and tension band, make sure to inspect back tension according to the adjustment procedure of MECHANISM ADJUSTMENT section.

2.7 PATCH CORD (YTU93082A) CONNECTION

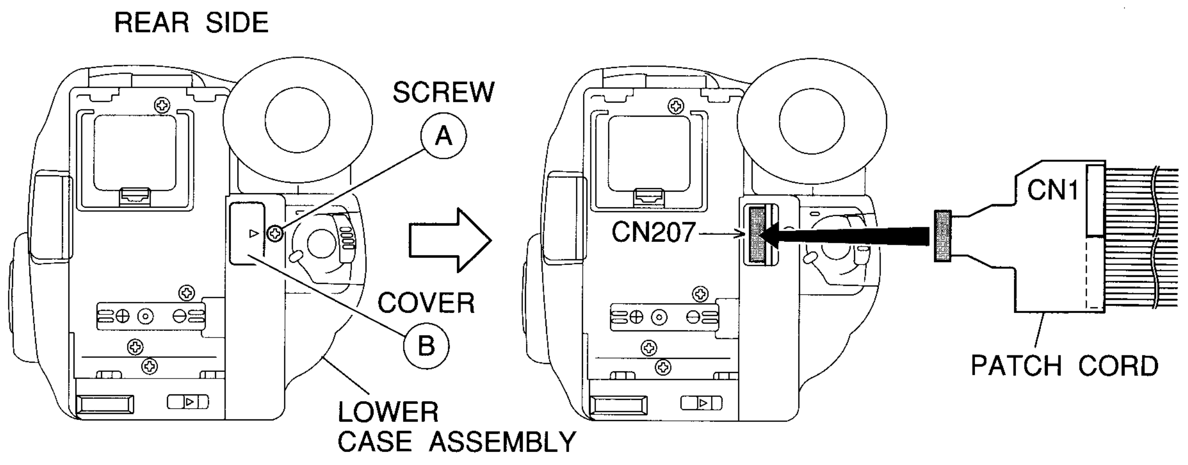

REAR SIDE
SCREW
A
COVER
B
LOWER CASE ASSEMBLY
CN207
CN1
PATCH CORD

Fig. 2-7-1 PATCH CORD CONNECTION

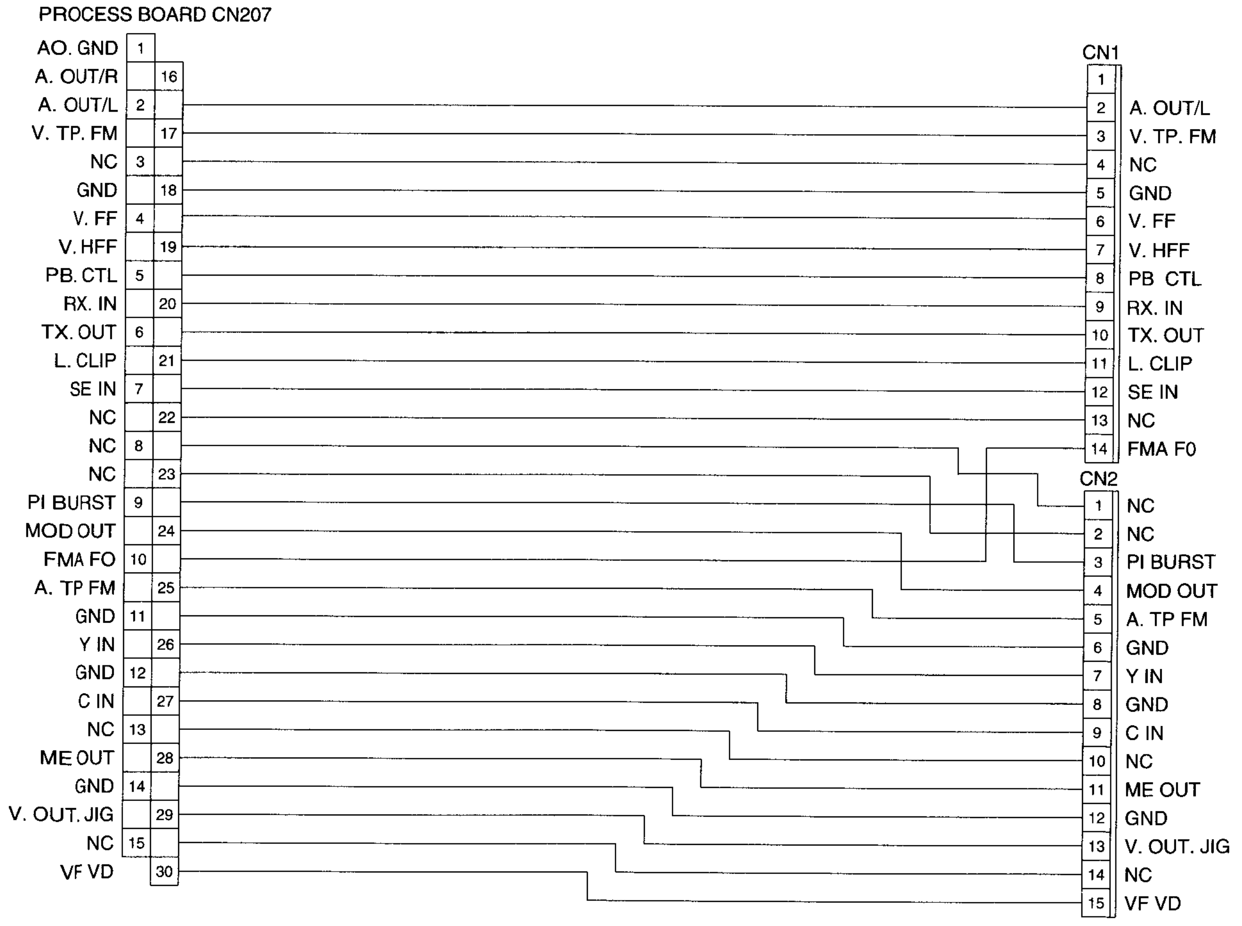

PROCESS BOARD CN207
AO. GND 1
A. OUT/R 16
A. OUT/L 2
V. TP. FM 17
NC 3
GND 18
V. FF 4
V. HFF 19
PB. CTL 5
RX. IN 20
TX. OUT 6
L. CLIP 21
SE IN 7
NC 22
NC 8
NC 23
PI BURST 9
MOD OUT 24
FMA FO 10
A. TP FM 25
GND 11
Y IN 26
GND 12
C IN 27
NC 13
ME OUT 28
GND 14
V. OUT. JIG 29
NC 15
VF VD 30
CN1
1
2 A. OUT/L
3 V. TP. FM
4 NC
5 GND
6 V. FF
7 V. HFF
8 PB CTL
9 RX. IN
10 TX. OUT
11 L. CLIP
12 SE IN
13 NC
14 FMA F0
CN2
1 NC
2 NC
3 PI BURST
4 MOD OUT
5 A. TP FM
6 GND
7 Y IN
8 GND
9 C IN
10 NC
11 ME OUT
12 GND
13 V. OUT. JIG
14 NC
15 VF VD

Fig. 2-7-2 PATCH CORD SCHEMATIC DIAGRAM

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJUSTMENT

3.1.1 PREPARATION

1. Precaution

This model does not contain adjustment controls (VR). General deck system and camera system adjustment are not required. However, if MAIN board need replacement, please use original E^2PROM on to new board. Then adjustment are not required. And if parts such as the following need replacement, special computerized adjustment are required (Refer to sec. 3.1.1-5). Please contact to JVC service for detaile information.

- OP block
- E^2PROM (IC104 of PROCESS board)

In the event of malfunction with electrical circuits, troubleshooting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

1. In case of wiring to chip test points for measurement, use IC clips, etc. to avoid any stress.
2. Since connectors are fragile, carefully handle them in disconnecting and connecting.
3. Shortcircuit between operation un it and DECK chassis.

2. Required test equipment

1. Colour TV monitor.
2. AC power adapter (AA-V11 and AA-V6 or equivalent).
3. Oscilloscope (dual-trace type, for more than 20 MHz).
4. Digital voltmeter
5. Personal computer

3. Required adjustment tools

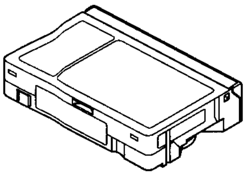
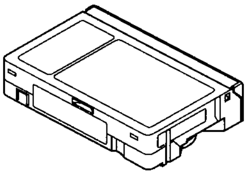
Alignment tape for SP Interchangeability (MHPE-C)	Alignment tape for N. SP PB Y/C level (MHVE-2C)
	

Table 3-1-1 Required adjustment tools

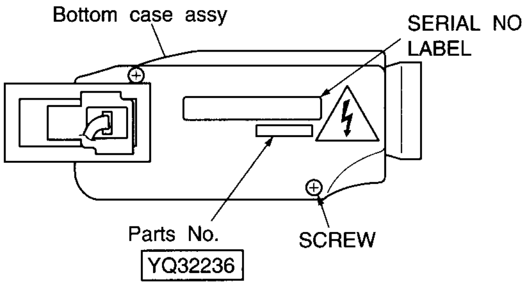
4. Setup for E. VF section adjustment

1. Referring to "SEC. 1 DISASSEMBLY" and connect the E. VF connector CN1 of the E. VF board to CN206 of the PROCESS board of deck section.

Note:

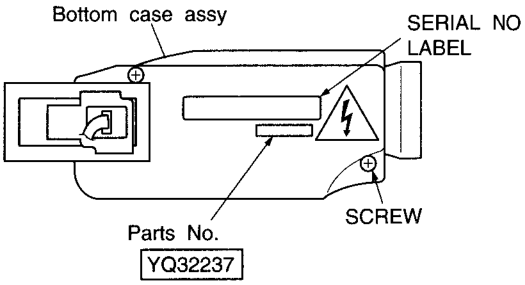
- *There are two types of E. VFs for this model.*
- *The adjustment procedure of them are different. For performing the adjustment, please follow the item mentioned on the figure below.*

<TYPE M> (YQ32236)



Adjustment Item : 3.2

<TYPE T> (YQ32237)



Adjustment Item : 3.3

5. Required adjustment tools for Service support system

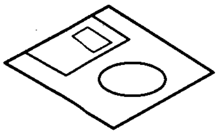
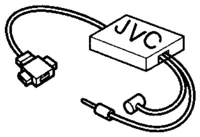
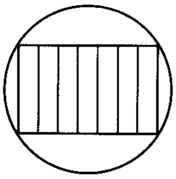
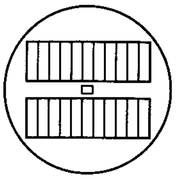
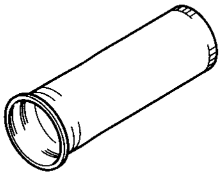
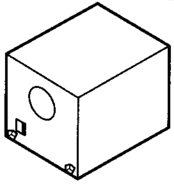
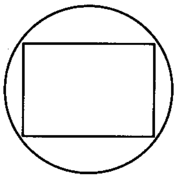
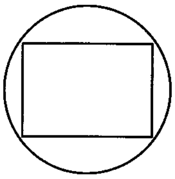
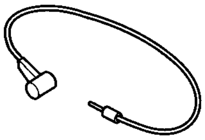
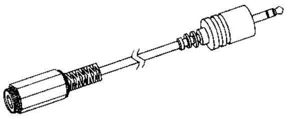
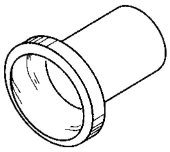
service suport system software YTU94057-24	Interface cable YTU93063	Color bar chart YTU92001-051	Gray scale chart YTU92001-052
			
Infinity adjustment lens YTU92001B	Light box YTU93072A-1	White balance chart YTU92001-053	Skintone chart YTU92001-054
			
Adapter cable YTU94066	JLIP conversion cable YTU94084A	1 m focus chart YTU92001-016	
			

Table 3-1-2 Required adjustment tools for Service support system

6. Connections for Service support system

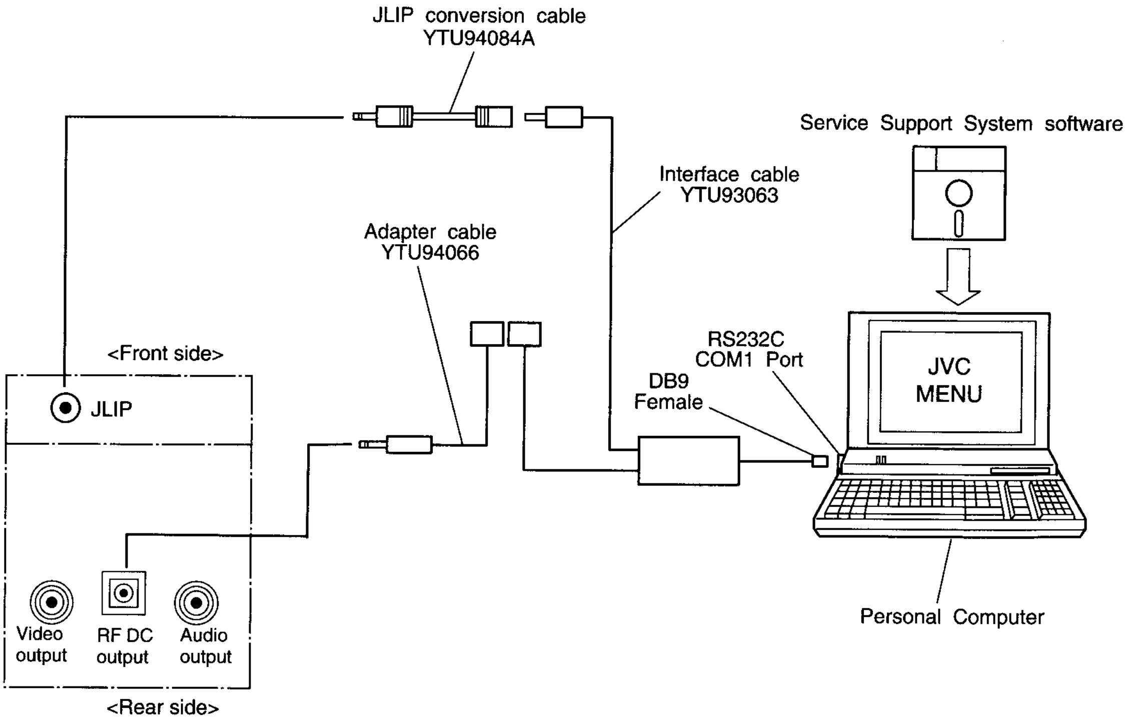

JLIP conversion cable
YTU94084A
Service Support System software
Interface cable
YTU93063
Adapter cable
YTU94066
JVC
MENU
RS232C
COM1 Port
DB9
Female
<Front side>
JLIP
Video output
RF DC output
Audio output
<Rear side>
Personal Computer

Fig. 3-1-1 Connection for Service support system

■ CIRCUIT PROTECTOR LOCATION FOR REAR, AV/MS and PROCESS BOARDS

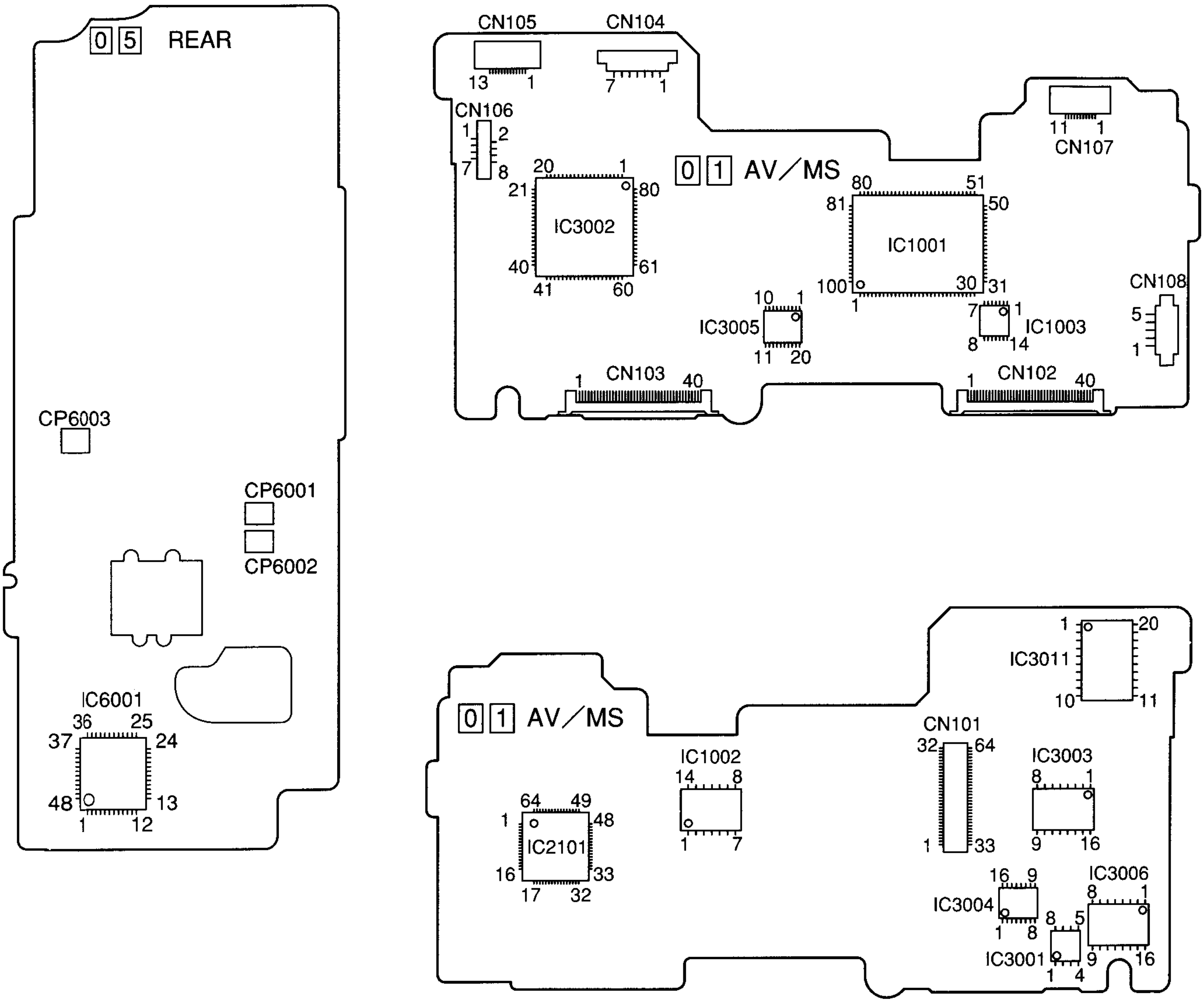

0 5 REAR
CP6003
CP6001
CP6002
IC6001
36 25
37 24
48 13
1 12
CN105
13 1
CN104
7 1
CN106
1 2
7 8
0 1 AV/MS
IC3002
20 1
21 80
40 61
41 60
IC1001
80 51
81 50
100 30 31
1
IC3005
10 1
11 20
IC1003
7 1
8 14
CN107
11 1
CN108
5
1
CN103
1 40
CN102
1 40
0 1 AV/MS
IC3011
1 20
10 11
CN101
32 64
1 33
IC3003
8 1
9 16
IC1002
14 8
1 7
IC2101
64 49
1 48
16 33
17 32
IC3004
16 9
1 8
IC3006
8 1
9 16
IC3001
8 5
1 4

Fig. 3-1-2 Circuit protector, IC and connector location for REAR and AV/MS board assembly

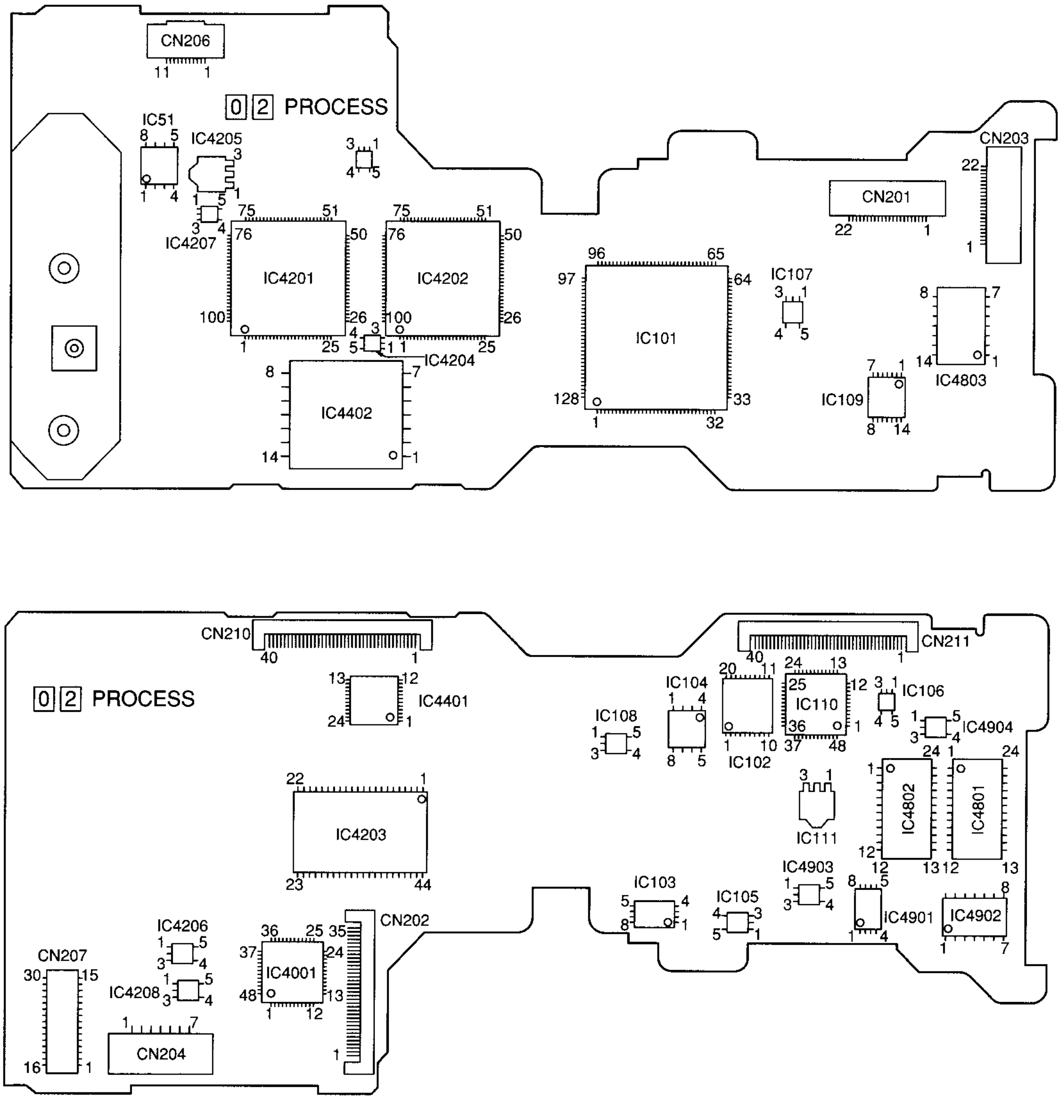

02 PROCESS
CN206
IC51
IC4205
IC4207
IC4201
IC4202
IC4204
IC4402
IC101
IC107
CN201
CN203
IC4803
IC109
CN210
CN211
IC4401
IC4203
IC108
IC104
IC102
IC110
IC106
IC4904
IC111
IC4802
IC4801
IC4903
IC103
IC105
IC4901
IC4902
IC4206
IC4208
IC4001
CN202
CN207
CN204

Fig. 3-1-3 IC and connector location for PROCESS board assembly

3.2 ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT <TYPE M>

Notes: *Unless otherwise specified, all measurement points and adjustment parts are located on E. VF board.*

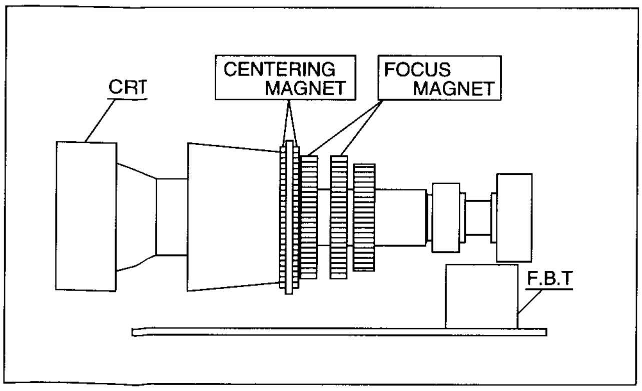

CRT
CENTERING MAGNET
FOCUS MAGNET
F.B.T

Fig. 3-2-1 E. VF

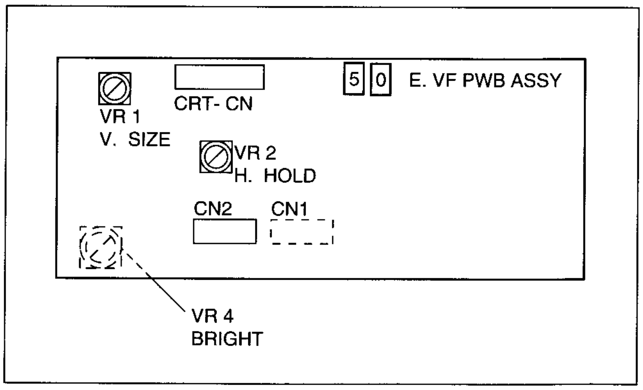

VR 1
V. SIZE
CRT- CN
50 E. VF PWB ASSY
VR 2
H. HOLD
CN2
CN1
VR 4
BRIGHT

Fig. 3-2-2 E. VF board

3.2.1 Horizontal sync.

Subject	• Alignment tape [MHPE-C] • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR2 (H. HOLD)
Specification	• The midpoint of the two markings

1) Observing the viewfinder screen, turn VR2 fully clockwise to make the picture unstable.
2) Slowly return VR2 counterclockwise to find a point where the picture becomes stable, and mark this position.
3) Turn VR2 fully counterclockwise to make the picture unstable in the same manner as 1) above.
4) Slowly return VR2 clockwise until the picture becomes stable, and mark this position.
5) Finally set VR2 to the midpoint between the two markings of 2) and 4).

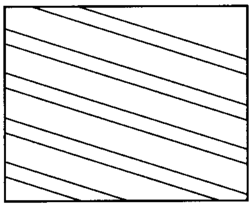

(a)

Fig. 3-2-3 Horizontal sync. 1

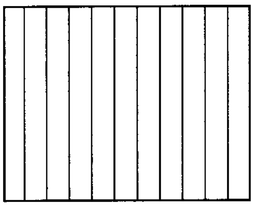

(b)

Fig. 3-2-4 Horizontal sync. 2

3.2.2 PLL adjustment

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR1 (V. SIZE)
Specification	• Normal picture amplitude

1) Observing the viewfinder screen, adjust VR1 for normal picture amplitude.

3.2.3 Centering

Subject	• Alignment tape [MHPE-C] • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• Centering magnet (CRT assy)
Specification	• The center of the E. VF screen

1) While observing the viewfinder screen, adjust the centering magnet to locate the stairstep in the center of the viewfinder screen.

3.2.4 Focus

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurment point	• E. VF screen
Adjustment part	• Focus magnet (CRT assy)
Specification	• The center area is clear and defined

1) While observing the viewfinder screen, adjust the focus magnet for the deflecting yoke so that the picture at the central area of the screen is clear and defined.

3.2.5 Brightness

Subject	• -
Mode	• EE • Lens closed
Equipment	• E. VF
Measurment point	• E. VF screen
Adjustment part	• VR4 (BRIGHT)
Specification	• The CRT raster is just barely visible

1) Close the lens with the cap and adjust VR4 so that the raster of the CRT is just visible in the E. VF.

3.3 ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT <TYPE T>

Notes:

- *Unless otherwise specified, all measurement points and adjustment parts are located on E. VF board.*
- *After adjustment or replacement of the deflection yoke or the centering magnet, fix it by the band as shown the figure below.*

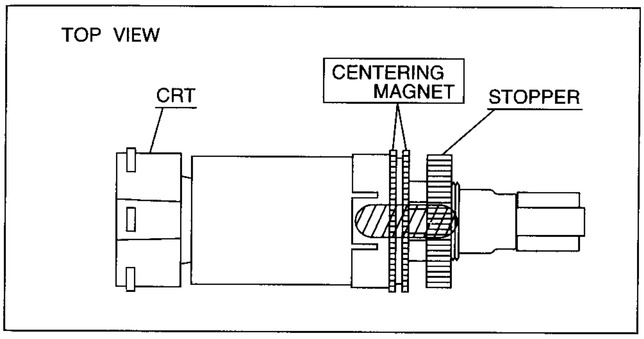


Fig. 3-3-1 E. VF

- *After adjustment is completed, compare the picture on the E. VF screen with the monitor TV.*

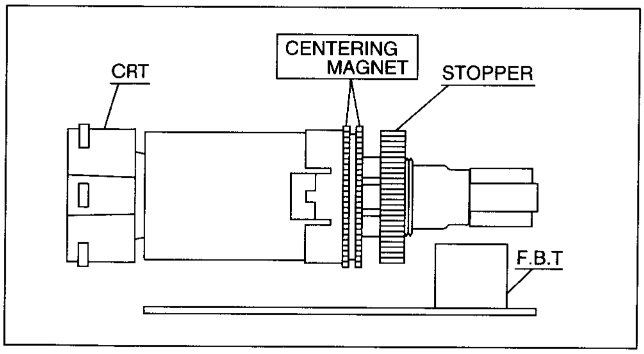


Fig. 3-3-2 E. VF

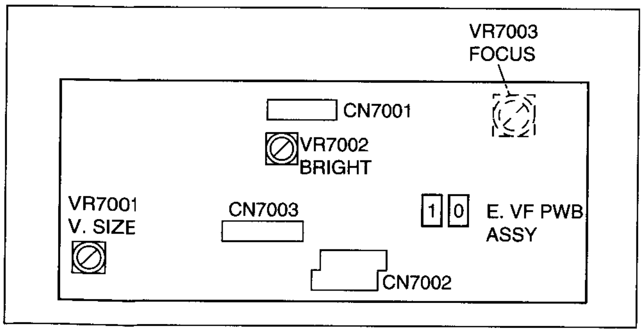


Fig. 3-3-3 E. VF board

3.3.1 Tilt

Subject	• Alignment tape [MHPE-C] • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• Deflection yoke
Specification	• The picture is visible as same as monitor TV.

1) Put the deflection yoke to the most inner side of CRT neck first. Then fix the stopper temporary.
2) Adjust the tilt of picture on the E. VF screen by tilting the deflection yoke.
3) Fix the stopper completely.

3.3.2 Centering

Subject	• Alignment tape [MHPE-C] • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• Centering magnet (CRT assy)
Specification	• The centre of the E. VF screen

1) While observing the viewfinder screen, adjust the centering magnet to locate the stairstep in the centre of the viewfinder screen.

3.3.3 Vertical scanning

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7001 (V. SIZE)
Specification	• Normal picture amplitude

1) Observing the viewfinder screen, adjust VR7001 for normal picture amplitude.

3.3.4 Brightness

Subject	• –
Mode	• EE • Lens closed
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7002 (BRIGHT)
Specification	• The CRT raster is just barely visible

1) Close the lens with the cap and adjust VR7002 so that the raster of the CRT is just visible in the E. VF.

3.3.5 Focus

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7003 (FOCUS)
Specification	• The centre area is clear and defined

1) While observing the viewfinder screen, adjust VR7003 so that the picture at the central area of the screen is clear and defined.

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

1. Units of components on the schematic diagram

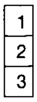
Unless otherwise specified.

1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values are in µH, (m: mH).
4) All diodes are 1SS133, MA165 or IN4148M (refer to parts list).

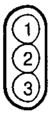
2. Indications of control voltage

AUX : Active only at high
$\overline{\text{AUX}}$ or AUX(L) : Active at low

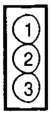
3. Interpreting Connector indications



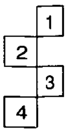
Removable connector



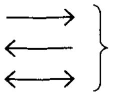
Wire soldered directly on board



Non-removable Board connector



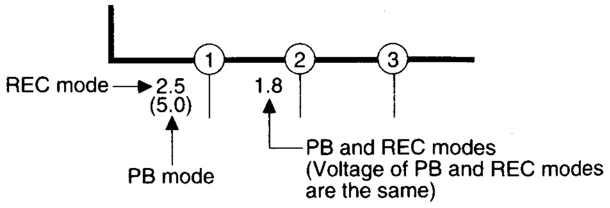
Board to Board



Connected pattern on board

4. Voltage measurement

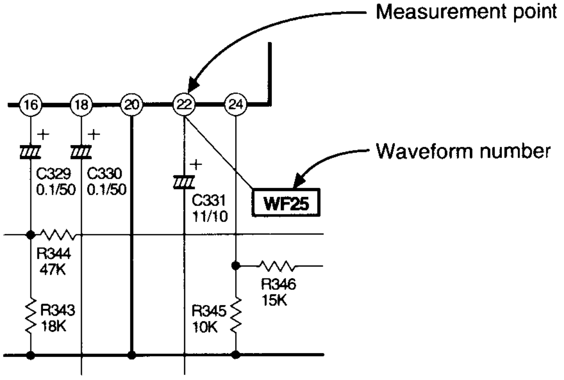
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.


①
②
③
REC mode
2.5
(5.0)
1.8
PB mode
PB and REC modes
(Voltage of PB and REC modes are the same)

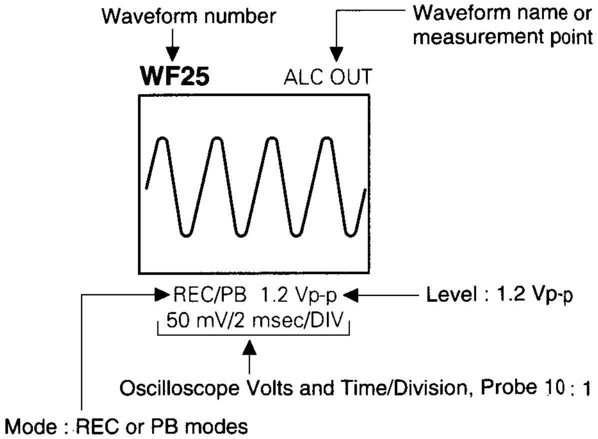
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test chatrs in the E-E mode
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.


Measurement point
Waveform number
⑯
⑱
⑳
㉒
㉔
C329
0.1/50
C330
0.1/50
C331
11/10
WF25
R344
47K
R343
18K
R345
10K
R346
15K

5) Waveform indications


Waveform number
Waveform name or measurement point
WF25
ALC OUT
REC/PB 1.2 Vp-p
Level : 1.2 Vp-p
50 mV/2 msec/DIV
Oscilloscope Volts and Time/Division, Probe 10 : 1
Mode : REC or PB modes

6. Signal path Symbols

The arrows indicate the signal path as follows.

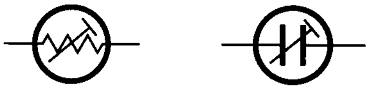
⇨	Playback signal path
▭▶	Playback and recording signal path
➡	Recording signal path (including E-E signal path)
⇨▷	Capstan servo path
➡▶	Drum servo path

(Example)

⇨ R-Y	Playback R-Y signal path
➡ Y	Recording Y signal path

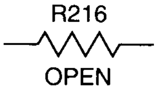
7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



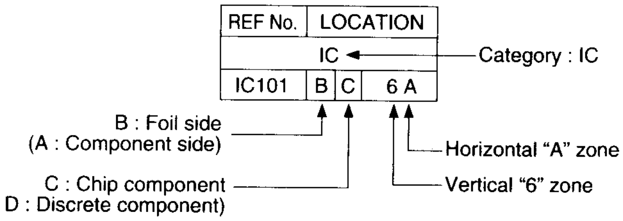
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

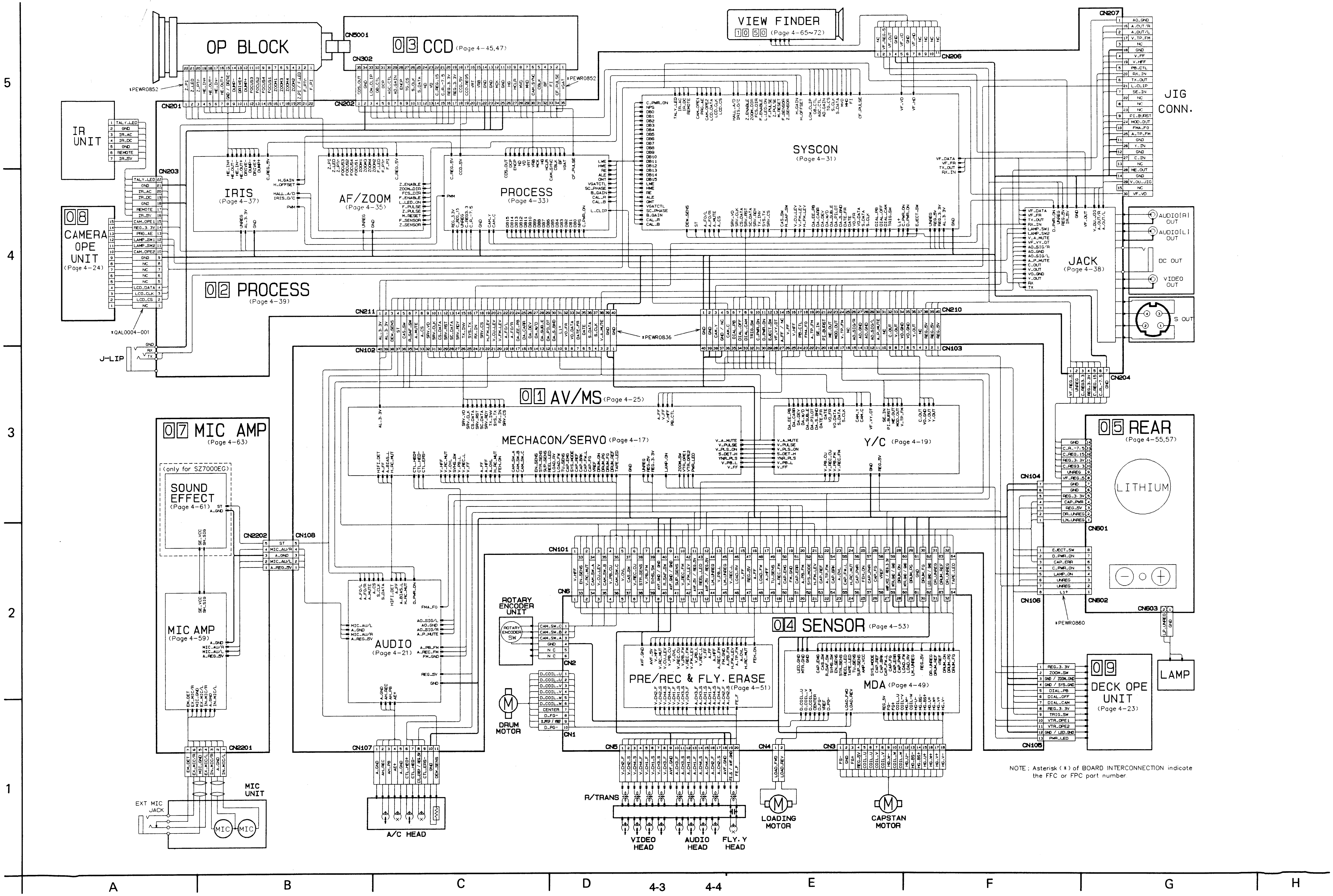
Parts location are indicated by guide scale on the circuit board.


REF No.
LOCATION
IC
Category : IC
IC101
B
C
6 A
B : Foil side
(A : Component side)
C : Chip component
D : Discrete component)
Horizontal "A" zone
Vertical "6" zone

Note:

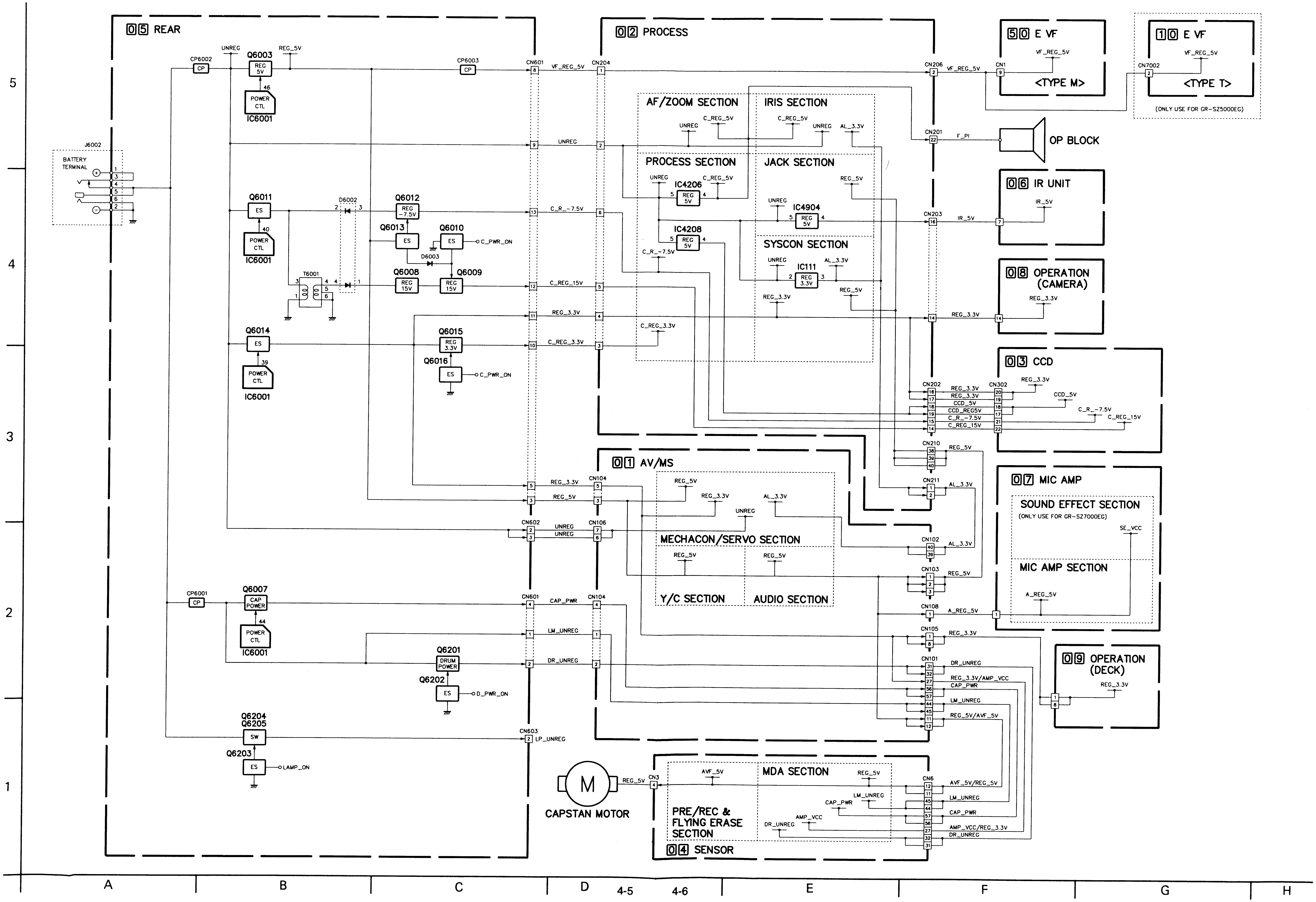
For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS


OP BLOCK
03 CCD (Page 4-45,47)
CN5001
CN302
CN201
CN202
*PEWR0852
VIEW FINDER
10 50 (Page 4-65~72)
CN206
CN207
JIG CONN.
IR UNIT
CN203
08 CAMERA OPE UNIT (Page 4-24)
*QAL0004-001
J-LIP
IRIS (Page 4-37)
AF/ZOOM (Page 4-35)
PROCESS (Page 4-33)
SYSCON (Page 4-31)
JACK (Page 4-38)
AUDIO(R) OUT
AUDIO(L) OUT
DC OUT
VIDEO OUT
S OUT
02 PROCESS (Page 4-39)
CN211
CN210
CN102
CN103
*PEWR0836
CN204
01 AV/MS (Page 4-25)
MECHACON/SERVO (Page 4-17)
Y/C (Page 4-19)
05 REAR (Page 4-55,57)
LITHIUM
CN104
CN601
CN602
CN603
CN106
*PEWR0860
LAMP
07 MIC AMP (Page 4-63)
(only for SZ7000EG)
SOUND EFFECT (Page 4-61)
MIC AMP (Page 4-59)
CN2202
CN108
CN2201
AUDIO (Page 4-21)
CN101
CN5
ROTARY ENCODER UNIT
ROTARY ENCODER SW
CN2
CN1
DRUM MOTOR
04 SENSOR (Page 4-53)
PRE/REC & FLY. ERASE (Page 4-51)
MDA (Page 4-49)
09 DECK OPE UNIT (Page 4-23)
CN105
CN107
A/C HEAD
CN5
R/TRANS
VIDEO HEAD
AUDIO HEAD
FLY.Y HEAD
CN4
LOADING MOTOR
CN3
CAPSTAN MOTOR
MIC UNIT
EXT MIC JACK
MIC
1
2
3
4
5
A
B
C
D
E
F
G
H

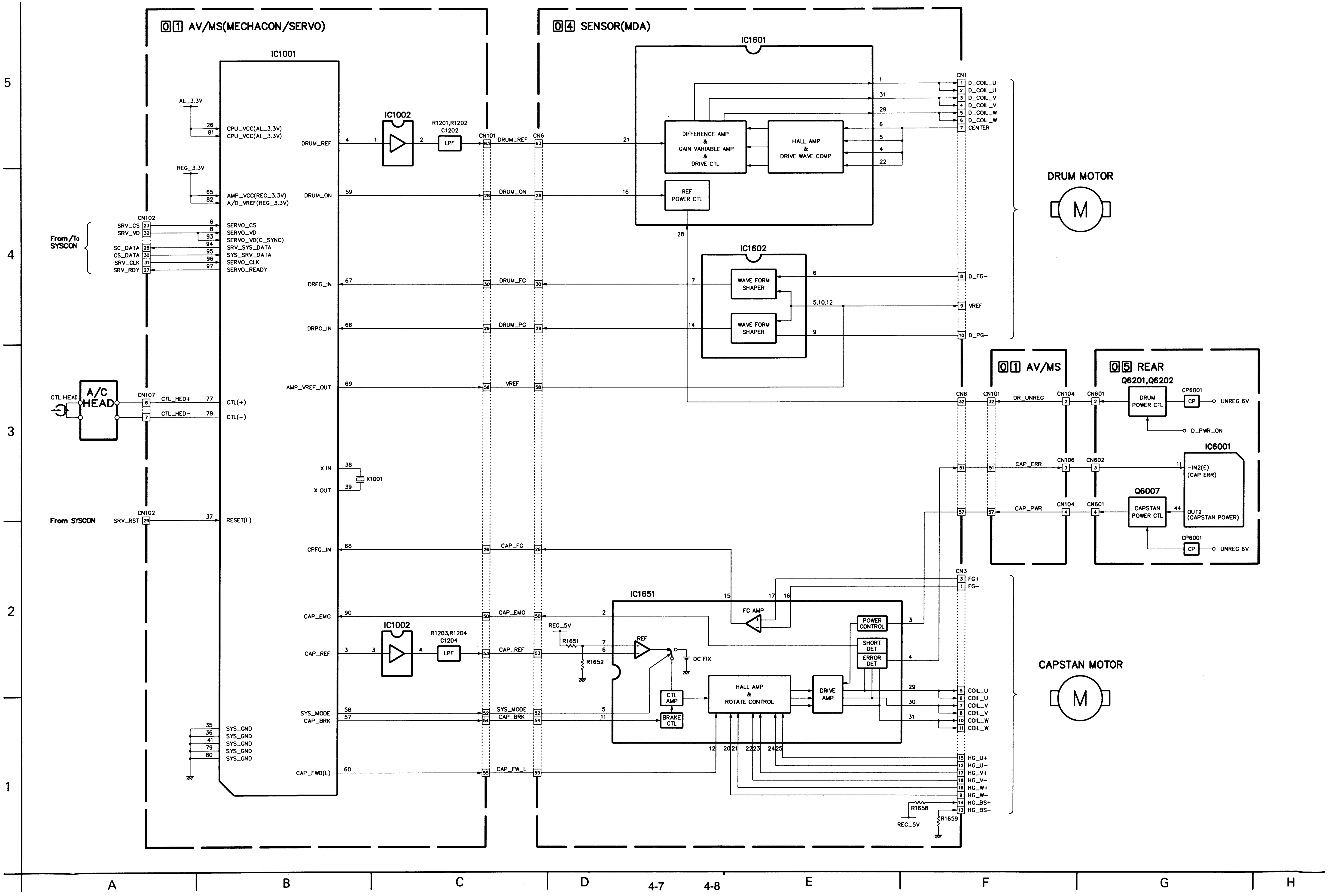
NOTE: Asterisk (*) of BOARD INTERCONNECTION indicate the FFC or FPC part number

4.2 POWER SYSTEM BLOCK DIAGRAM

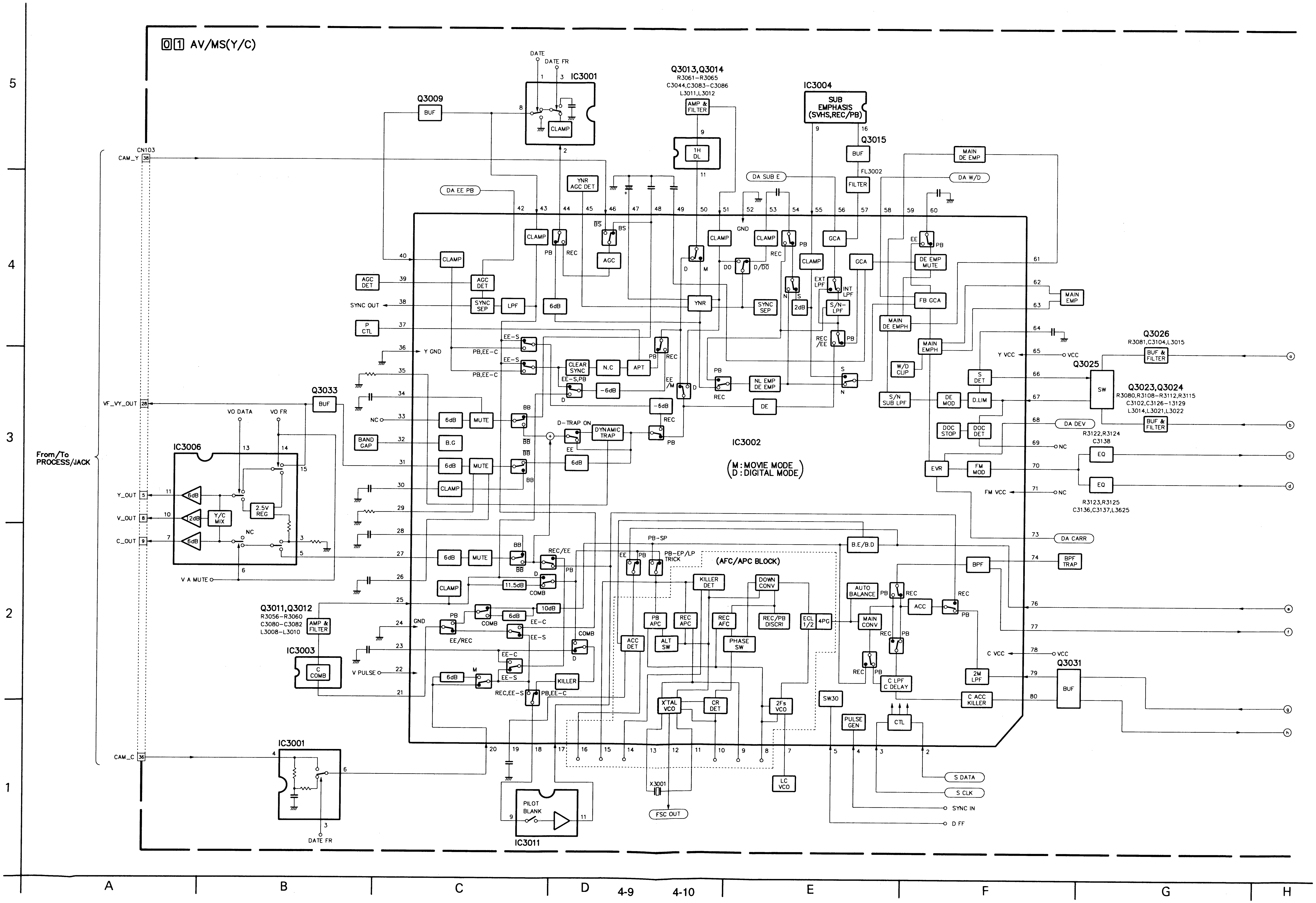


05 REAR
02 PROCESS
50 E VF
10 E VF
VF_REG_5V
<TYPE M>
<TYPE T>
(ONLY USE FOR GR-SZ5000EG)
CN1
CN7002
CN206
J6002
BATTERY TERMINAL
CP6002
CP
UNREG
Q6003
REG 5V
REG_5V
POWER CTL
IC6001
CP6003
CN601
CN204
AF/ZOOM SECTION
IRIS SECTION
C_REG_5V
AL_3.3V
OP BLOCK
CN201
F_PI
PROCESS SECTION
JACK SECTION
IC4206
IC4208
IC4904
IC111
SYSCON SECTION
REG 3.3V
C_R_-7.5V
C_REG_3.3V
06 IR UNIT
IR_5V
CN203
08 OPERATION (CAMERA)
REG_3.3V
Q6011
ES
D6002
Q6012
REG -7.5V
Q6013
Q6010
C_PWR_ON
D6003
T6001
Q6008
REG 15V
Q6009
C_REG_15V
Q6014
Q6015
Q6016
03 CCD
CN202
CN302
CCD_5V
CCD_REG5V
CN210
01 AV/MS
CN104
CN211
CN602
CN106
MECHACON/SERVO SECTION
CN102
07 MIC AMP
SOUND EFFECT SECTION
(ONLY USE FOR GR-SZ7000EG)
SE_VCC
MIC AMP SECTION
A_REG_5V
CN103
Y/C SECTION
AUDIO SECTION
CN108
CP6001
Q6007
CAP POWER
CAP_PWR
LM_UNREG
Q6201
DRUM POWER
DR_UNREG
Q6202
D_PWR_ON
CN105
09 OPERATION (DECK)
CN101
REG_3.3V/AMP_VCC
REG_5V/AVF_5V
Q6204
Q6205
SW
CN603
LP_UNREG
Q6203
LAMP_ON
M
CAPSTAN MOTOR
CN3
AVF_5V
MDA SECTION
PRE/REC & FLYING ERASE SECTION
AMP_VCC
04 SENSOR
CN6
AVF_5V/REG_5V
AMP_VCC/REG_3.3V
1
2
3
4
5
A
B
C
D
E
F
G
H

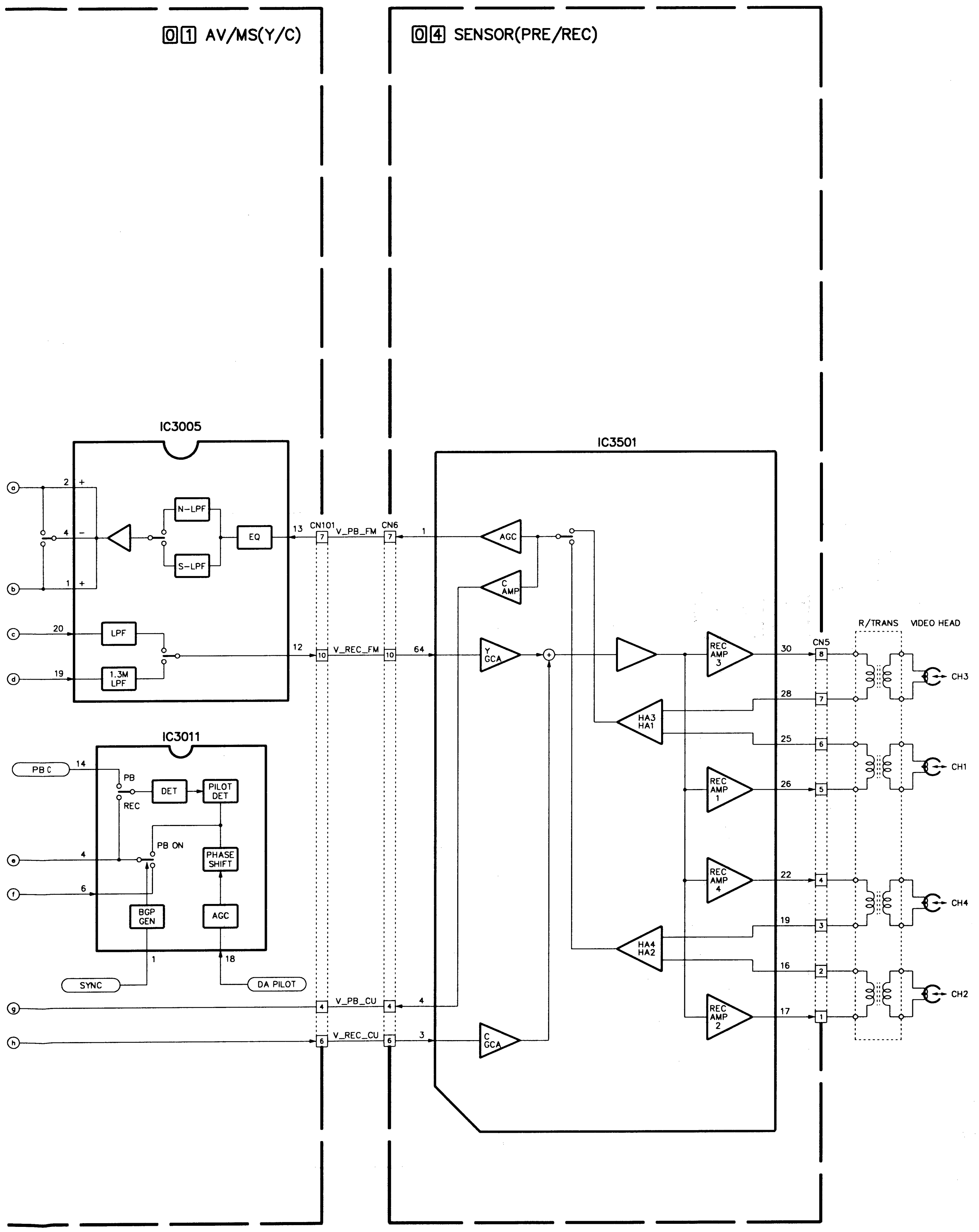
4.3 MECHACON/MDA BLOCK DIAGRAM


01 AV/MS(MECHACON/SERVO)
IC1001
AL_3.3V
CPU_VCC(AL_3.3V)
REG_3.3V
AMP_VCC(REG_3.3V)
A/D_VREF(REG_3.3V)
From/To SYSCON
CN102
SRV_CS
SRV_VD
SC_DATA
CS_DATA
SRV_CLK
SRV_RDY
SERVO_CS
SERVO_VD
SERVO_VD(C_SYNC)
SRV_SYS_DATA
SYS_SRV_DATA
SERVO_CLK
SERVO_READY
CTL HEAD
A/C HEAD
CN107
CTL_HED+
CTL_HED-
CTL(+)
CTL(-)
From SYSCON
SRV_RST
RESET(L)
X IN
X OUT
X1001
SYS_GND
DRUM_REF
DRUM_ON
DRFG_IN
DRPG_IN
AMP_VREF_OUT
CPFG_IN
CAP_EMG
CAP_REF
SYS_MODE
CAP_BRK
CAP_FWD(L)
IC1002
R1201,R1202
C1202
LPF
R1203,R1204
C1204
CN101
CN6
DRUM_REF
DRUM_ON
DRUM_FG
DRUM_PG
VREF
CAP_FG
CAP_EMG
CAP_REF
SYS_MODE
CAP_BRK
CAP_FW_L
04 SENSOR(MDA)
IC1601
DIFFERENCE AMP & GAIN VARIABLE AMP & DRIVE CTL
HALL AMP & DRIVE WAVE COMP
REF POWER CTL
IC1602
WAVE FORM SHAPER
WAVE FORM SHAPER
CN1
D_COIL_U
D_COIL_V
D_COIL_W
CENTER
D_FG-
VREF
D_PG-
DRUM MOTOR
M
IC1651
FG AMP
POWER CONTROL
SHORT DET
ERROR DET
REG_5V
R1651
R1652
REF
DC FIX
CTL AMP
BRAKE CTL
HALL AMP & ROTATE CONTROL
DRIVE AMP
CN3
FG+
FG-
COIL_U
COIL_V
COIL_W
HG_U+
HG_U-
HG_V+
HG_V-
HG_W+
HG_W-
HG_BS+
HG_BS-
R1658
R1659
REG_5V
CAPSTAN MOTOR
M
01 AV/MS
CN101
DR_UNREG
CAP_ERR
CAP_PWR
CN104
CN106
05 REAR
Q6201,Q6202
CN601
CN602
DRUM POWER CTL
CP6001
CP
UNREG 6V
D_PWR_ON
IC6001
-IN2(E) (CAP ERR)
OUT2 (CAPSTAN POWER)
Q6007
CAPSTAN POWER CTL
A
B
C
D
E
F
G
H
1
2
3
4
5

4.4 Y/C BLOCK DIAGRAM

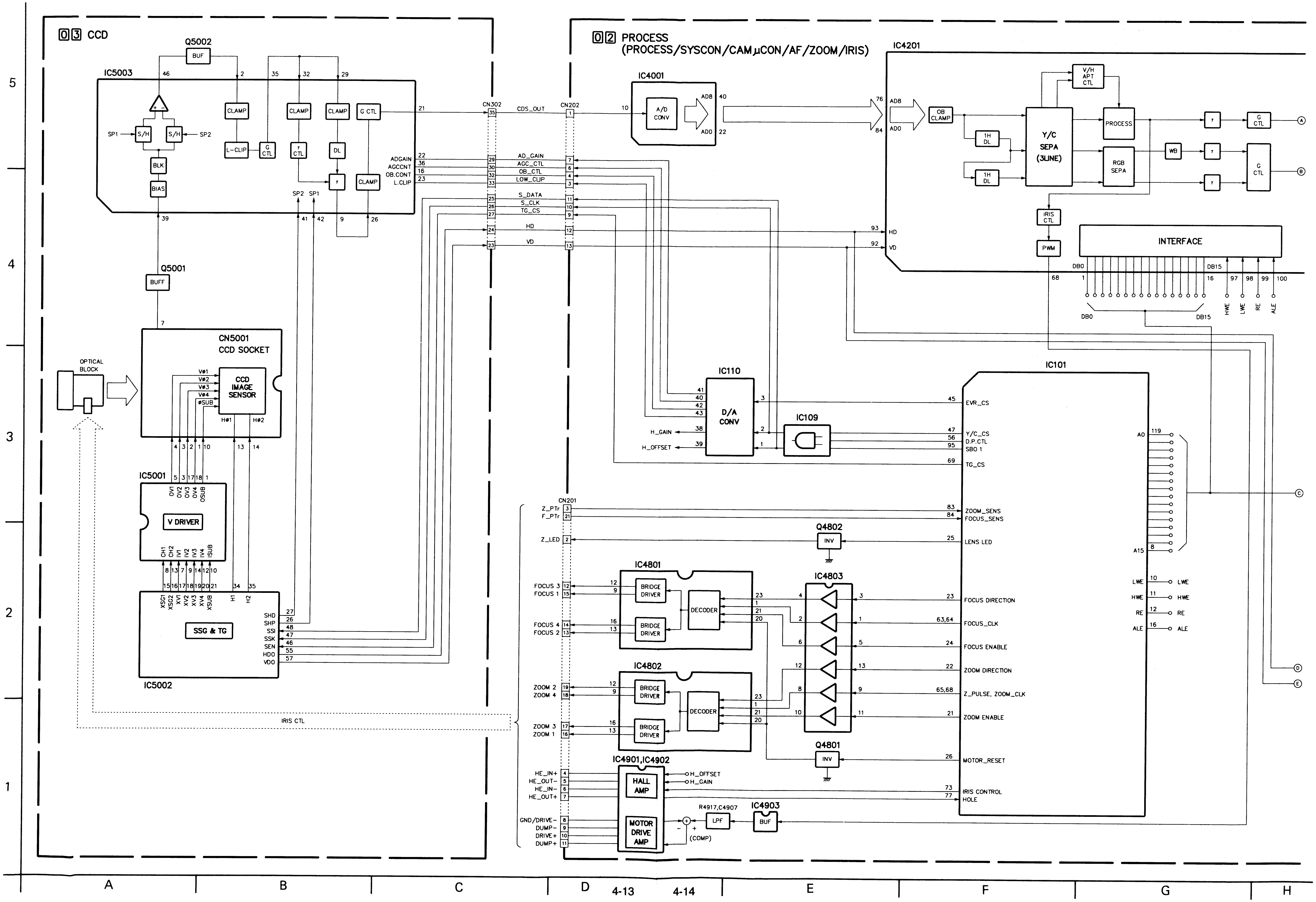


01 AV/MS(Y/C)
From/To PROCESS/JACK
CN103
CAM_Y
VF_VY_OUT
Y_OUT
V_OUT
C_OUT
CAM_C
V A MUTE
IC3006
6dB
12dB
6dB
Y/C MIX
2.5V REG
NC
VO DATA
VO FR
Q3033
BUF
Q3009
BUF
IC3001
DATE
DATE FR
CLAMP
Q3013,Q3014
R3061–R3065
C3044,C3083–C3086
L3011,L3012
AMP & FILTER
1H DL
IC3004
SUB EMPHASIS (SVHS,REC/PB)
Q3015
BUF
FL3002
FILTER
MAIN DE EMP
DA W/D
DA SUB E
DA EE PB
YNR AGC DET
AGC DET
SYNC OUT
P CTL
Y GND
NC
BAND GAP
SYNC SEP
LPF
6dB
AGC
YNR
CLAMP
GCA
DE EMP MUTE
FB GCA
MAIN DE EMPH
MAIN EMPH
W/D CLIP
S/N SUB LPF
DE MOD
D.LIM
S DET
DOC STOP
DOC DET
EVR
FM MOD
EXT LPF
INT LPF
S/N-LPF
2dB
REC/EE
CLEAR SYNC
N.C
APT
EE-S
PB,EE-C
EE-S,PB
-6dB
NL EMP DE EMP
DE
MUTE
B.G
D-TRAP ON
DYNAMIC TRAP
IC3002
(M:MOVIE MODE D:DIGITAL MODE)
(AFC/APC BLOCK)
PB-SP
PB-EP/LP TRICK
REC/EE
11.5dB
10dB
COMB
EE/REC
KILLER DET
DOWN CONV
PB APC
REC APC
REC AFC
REC/PB DISCRI
ECL 1/2
4PG
ALT SW
PHASE SW
ACC DET
AUTO BALANCE
MAIN CONV
ACC
B.E/B.D
BPF
X'TAL VCO
CR DET
2Fs VCO
SW30
PULSE GEN
CTL
C LPF C DELAY
2M LPF
C ACC KILLER
KILLER
LC VCO
X3001
FSC OUT
IC3011
PILOT BLANK
Q3011,Q3012
R3056–R3060
C3080–C3082
L3008–L3010
AMP & FILTER
IC3003
C COMB
V PULSE
GND
S DATA
S CLK
SYNC IN
D FF
Y VCC
VCC
FM VCC
C VCC
Q3026
R3081,C3104,L3015
BUF & FILTER
Q3025
SW
Q3023,Q3024
R3080,R3108–R3112,R3115
C3102,C3126–13129
L3014,L3021,L3022
DA DEV
R3122,R3124
C3138
EQ
R3123,R3125
C3136,C3137,L3625
DA CARR
BPF TRAP
MAIN EMP
Q3031
BUF
a
b
c
d
e
f
g
h
5
4
3
2
1
A
B
C
D
E
F
G
H

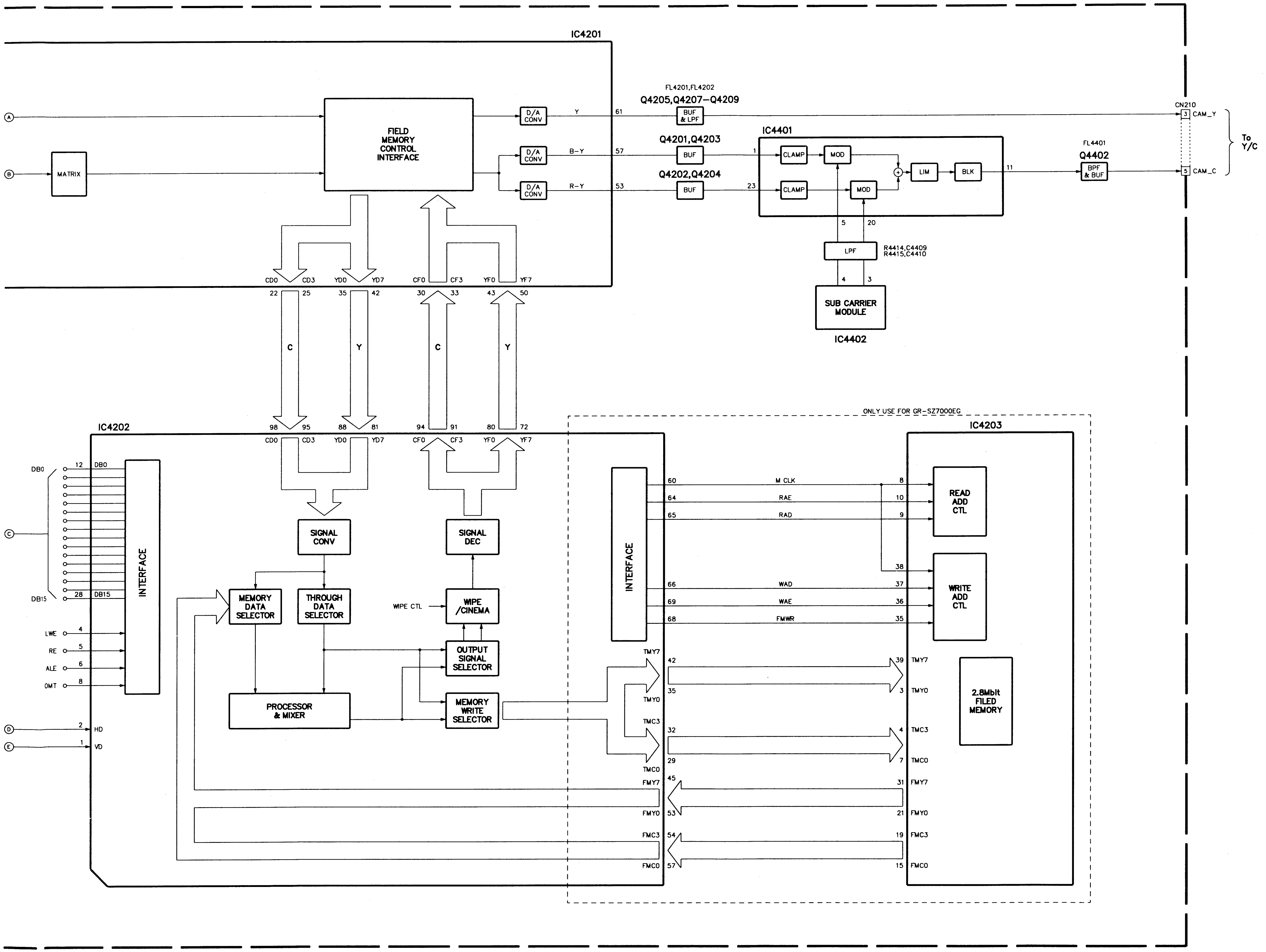


01 AV/MS(Y/C)
04 SENSOR(PRE/REC)
IC3005
N-LPF
S-LPF
EQ
LPF
1.3M LPF
IC3011
PBC
PB
REC
DET
PILOT DET
PB ON
PHASE SHIFT
BGP GEN
AGC
SYNC
DA PILOT
CN101
CN6
V_PB_FM
V_REC_FM
V_PB_CU
V_REC_CU
IC3501
AGC
C AMP
Y GCA
C GCA
HA3 HA1
HA4 HA2
REC AMP 3
REC AMP 1
REC AMP 4
REC AMP 2
CN5
R/TRANS
VIDEO HEAD
CH3
CH1
CH4
CH2

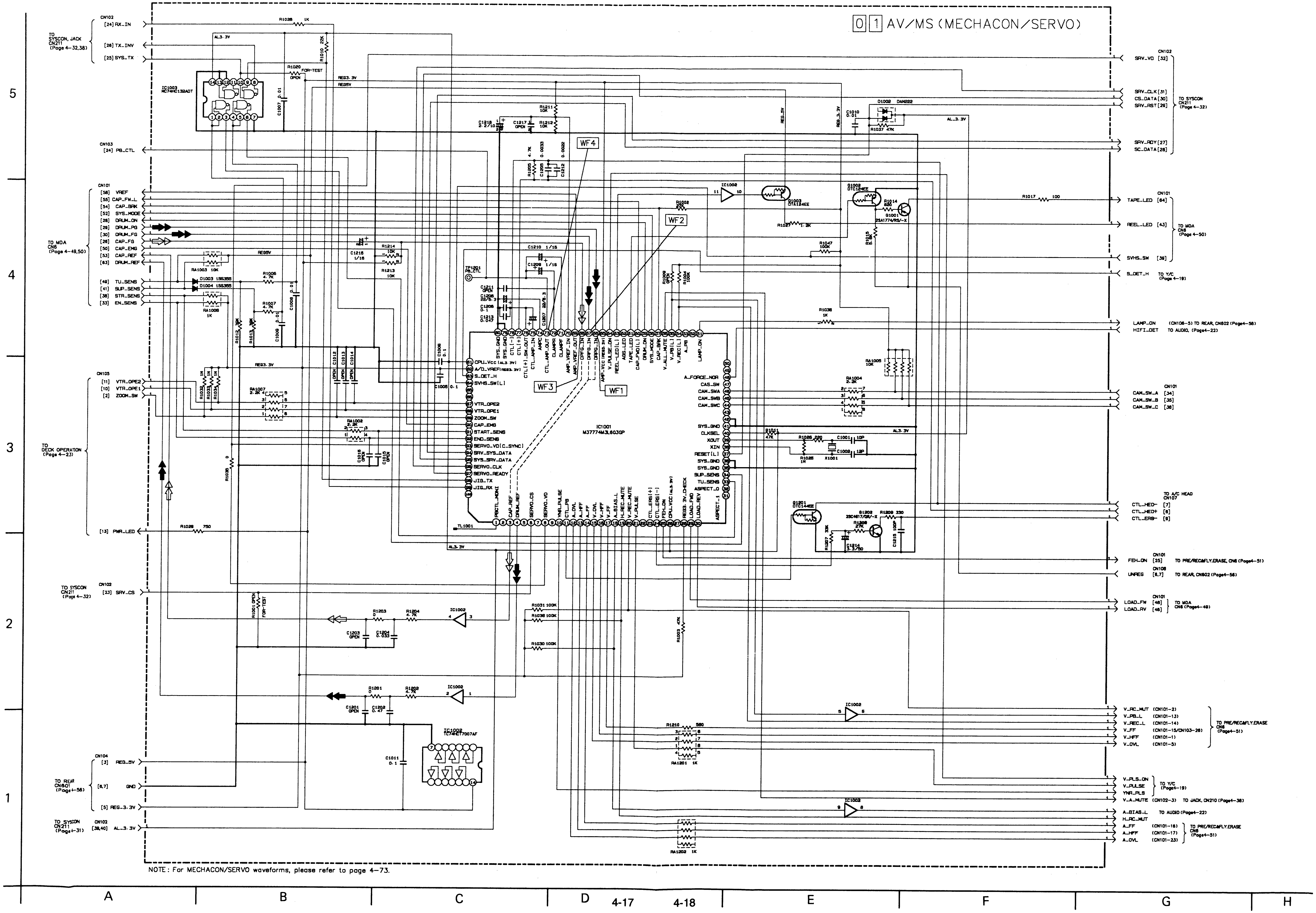
4.5 CAMERA BLOCK DIAGRAM



03 CCD
Q5002
BUF
IC5003
SP1
SP2
S/H
BLK
BIAS
CLAMP
L-CLIP
G CTL
DL
ADGAIN
AGCCNT
OB.CONT
L.CLIP
Q5001
BUFF
OPTICAL BLOCK
CN5001
CCD SOCKET
CCD IMAGE SENSOR
Vø1
Vø2
Vø3
Vø4
øSUB
Hø1
Hø2
IC5001
V DRIVER
OV1 OV2 OV3 OV4 OSUB
CH1 CH2 IV1 IV2 IV3 IV4 ISUB
XSG1 XSG2 XV1 XV2 XV3 XV4 XSUB H1 H2
SSG & TG
SHD
SHP
SSI
SSK
SEN
HDO
VDO
IC5002
IRIS CTL
CN302
CN202
CDS_OUT
AD_GAIN
AGC_CTL
OB_CTL
LOW_CLIP
S_DATA
S_CLK
TG_CS
HD
VD
02 PROCESS
(PROCESS/SYSCON/CAMµCON/AF/ZOOM/IRIS)
IC4001
A/D CONV
AD8
AD0
IC4201
OB CLAMP
1H DL
Y/C SEPA (3LINE)
V/H APT CTL
PROCESS
RGB SEPA
WB
IRIS CTL
PWM
INTERFACE
DB0
DB15
HWE
LWE
RE
ALE
IC110
D/A CONV
H_GAIN
H_OFFSET
IC109
IC101
EVR_CS
Y/C_CS
D.P.CTL
SBO 1
TG_CS
ZOOM_SENS
FOCUS_SENS
LENS LED
FOCUS DIRECTION
FOCUS_CLK
FOCUS ENABLE
ZOOM DIRECTION
Z_PULSE, ZOOM_CLK
ZOOM ENABLE
MOTOR_RESET
IRIS CONTROL
HOLE
A0
A15
CN201
Z_PTr
F_PTr
Z_LED
Q4802
INV
IC4801
BRIDGE DRIVER
DECODER
FOCUS 3
FOCUS 1
FOCUS 4
FOCUS 2
IC4803
IC4802
ZOOM 2
ZOOM 4
ZOOM 3
ZOOM 1
Q4801
IC4901,IC4902
HALL AMP
MOTOR DRIVE AMP
HE_IN+
HE_OUT−
HE_IN−
HE_OUT+
GND/DRIVE−
DUMP−
DRIVE+
DUMP+
R4917,C4907
LPF
IC4903
BUF
(COMP)
A
B
C
D
E
F
G
H
1
2
3
4
5

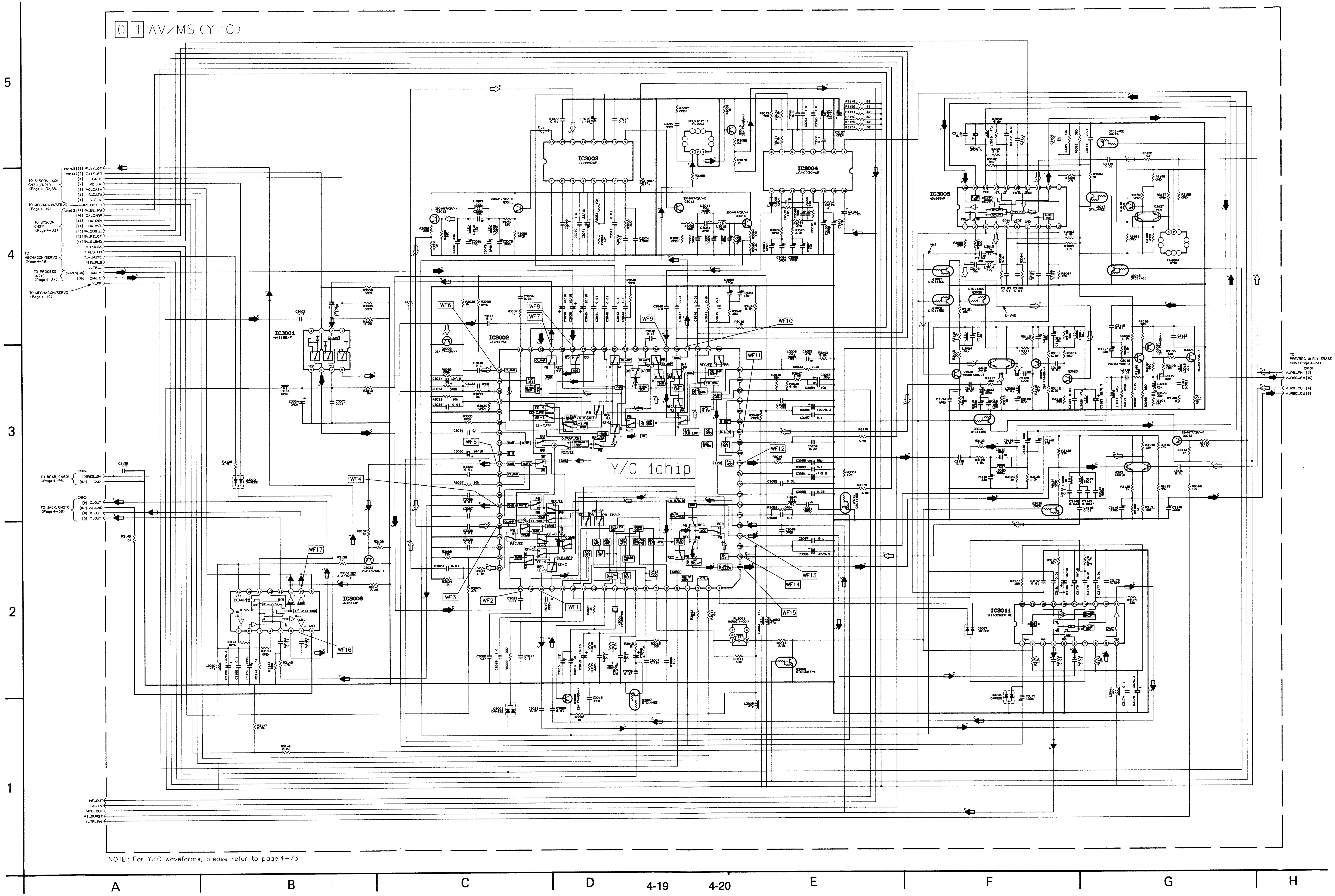

IC4201
A
B
MATRIX
FIELD MEMORY CONTROL INTERFACE
D/A CONV
D/A CONV
D/A CONV
Y
B-Y
R-Y
61
57
53
FL4201,FL4202
Q4205,Q4207–Q4209
BUF & LPF
Q4201,Q4203
BUF
Q4202,Q4204
BUF
IC4401
1
23
CLAMP
CLAMP
MOD
MOD
LIM
BLK
11
5
20
LPF
R4414,C4409
R4415,C4410
4
3
SUB CARRIER MODULE
IC4402
FL4401
Q4402
BPF & BUF
CN210
3 CAM_Y
5 CAM_C
To Y/C
CD0
CD3
YD0
YD7
CF0
CF3
YF0
YF7
22
25
35
42
30
33
43
50
C
Y
C
Y
98
95
88
81
94
91
80
72
IC4202
CD0
CD3
YD0
YD7
CF0
CF3
YF0
YF7
DB0
12 DB0
C
DB15
28 DB15
INTERFACE
LWE 4
RE 5
ALE 6
OMT 8
D 2 HD
E 1 VD
SIGNAL CONV
SIGNAL DEC
MEMORY DATA SELECTOR
THROUGH DATA SELECTOR
WIPE CTL
WIPE /CINEMA
OUTPUT SIGNAL SELECTOR
PROCESSOR & MIXER
MEMORY WRITE SELECTOR
ONLY USE FOR GR-SZ7000EG
IC4203
INTERFACE
60 M CLK 8
64 RAE 10
65 RAD 9
READ ADD CTL
38
66 WAD 37
69 WAE 36
68 FMWR 35
WRITE ADD CTL
TMY7 42
39 TMY7
TMY0 35
3 TMY0
TMC3 32
4 TMC3
TMC0 29
7 TMC0
FMY7 45
31 FMY7
FMY0 53
21 FMY0
FMC3 54
19 FMC3
FMC0 57
15 FMC0
2.8Mbit FILED MEMORY

4.6 MECHACON SCHEMATIC DIAGRAM


01 AV/MS (MECHACON/SERVO)
TO SYSCON, JACK CN211 (Page 4-32,38)
CN102 [24] RX_IN
[26] TX_INV
[25] SYS_TX
CN103 [24] PB_CTL
TO MDA CN6 (Page 4-49,50)
CN101 [58] VREF
[55] CAP_FW_L
[54] CAP_BRK
[52] SYS_MODE
[28] DRUM_ON
[29] DRUM_PG
[30] DRUM_FG
[26] CAP_FG
[50] CAP_EMG
[53] CAP_REF
[63] DRUM_REF
[49] TU_SENS
[41] SUP_SENS
[38] STR_SENS
[33] EN_SENS
TO DECK OPERATION (Page 4-23)
CN105 [11] VTR_OPE2
[10] VTR_OPE1
[2] ZOOM_SW
[13] PWR_LED
TO SYSCON CN211 (Page 4-32)
CN102 [23] SRV_CS
TO REAR CN601 (Page 4-56)
CN104 [3] REG_5V
[6,7] GND
[5] REG_3.3V
TO SYSCON CN211 (Page 4-31)
CN102 [39,40] AL_3.3V
IC1003 MC74HC132ADT
IC1001 M37774M3L603GP
IC1002 TC74HCT7007AF
WF1
WF2
WF3
WF4
CN102 SRV_VD [32]
SRV_CLK [31]
CS_DATA [30]
SRV_RST [29]
SRV_RDY [27]
SC_DATA [28]
TO SYSCON CN211 (Page 4-32)
CN101 TAPE_LED [64]
REEL_LED [43]
SVHS_SW [39]
TO MDA CN6 (Page 4-50)
S_DET_H TO Y/C (Page 4-19)
LAMP_ON (CN106-5) TO REAR, CN602 (Page 4-56)
HIFI_DET TO AUDIO, (Page 4-22)
CN101 CAM_SW_A [34]
CAM_SW_B [35]
CAM_SW_C [36]
TO A/C HEAD CN107
CTL_HED- [7]
CTL_HED+ [6]
CTL_ERS- [8]
CN101 FEH_ON [25] TO PRE/REC&FLY.ERASE, CN6 (Page 4-51)
CN106 UNREG [6,7] TO REAR, CN602 (Page 4-56)
CN101 LOAD_FW [48]
LOAD_RV [46]
TO MDA CN6 (Page 4-49)
V_RC_MUT (CN101-2)
V_PB_L (CN101-13)
V_REC_L (CN101-14)
V_FF (CN101-15/CN103-26)
V_HFF (CN101-1)
V_OVL (CN101-3)
TO PRE/REC&FLY.ERASE CN6 (Page 4-51)
V_PLS_ON
V_PULSE
YNR_PLS
TO Y/C (Page 4-19)
V_A_MUTE (CN102-3) TO JACK, CN210 (Page 4-38)
A_BIAS_L TO AUDIO (Page 4-22)
H_RC_MUT
A_FF (CN101-18)
A_HFF (CN101-17)
A_OVL (CN101-23)
TO PRE/REC&FLY.ERASE CN6 (Page 4-51)
D1002 DAN222
Q1001 2SA1774/RS/-X
Q1002 DTC124EE
Q1003 DTA124EE
Q1201 DTC144EE
Q1202 2SC4617/QR/-X
D1003 1SS355
D1004 1SS355
X1001
1
2
3
4
5
A
B
C
D
E
F
G
H

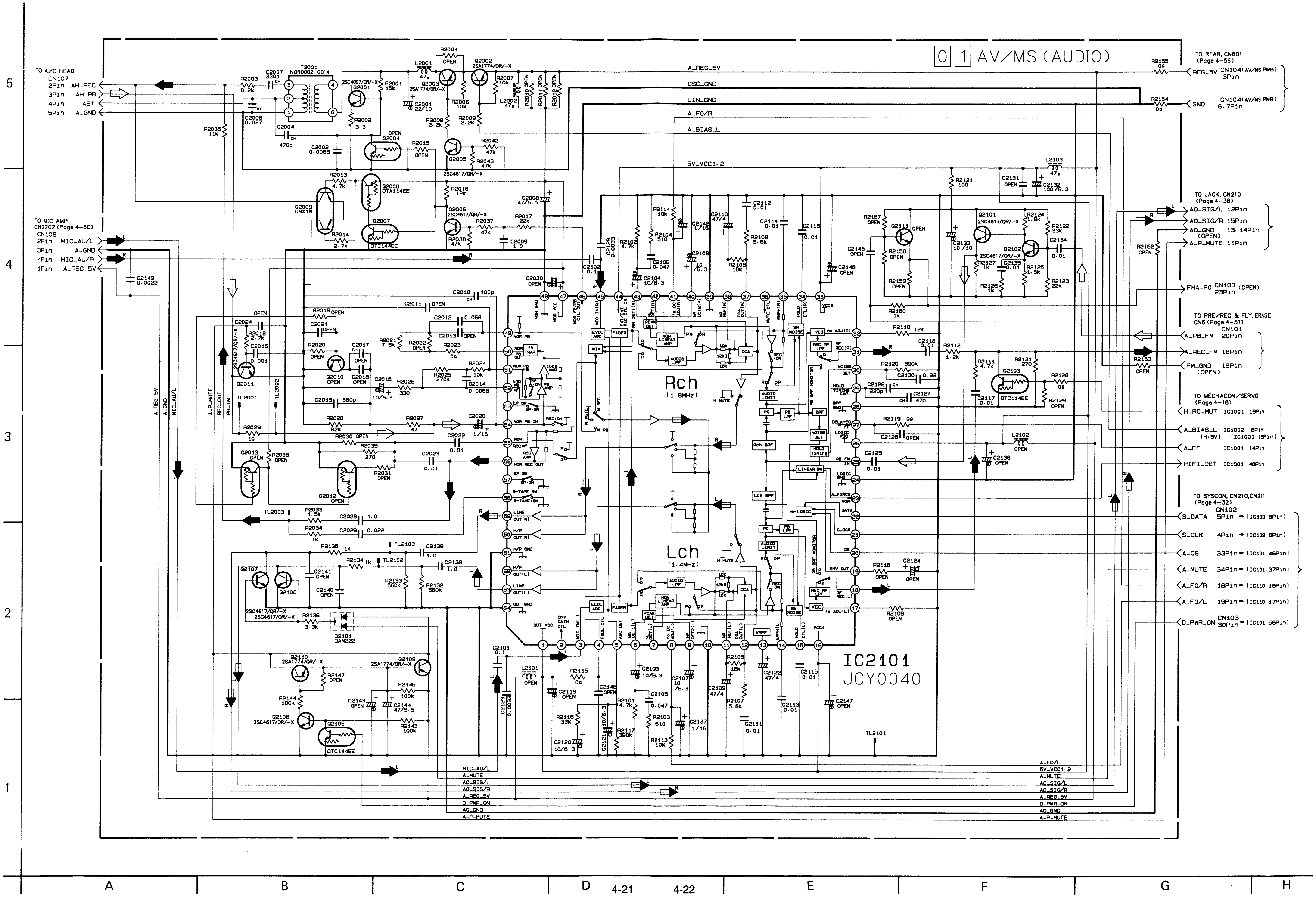
NOTE : For MECHACON/SERVO waveforms, please refer to page 4-73.

4.7 Y/C SCHEMATIC DIAGRAM


01 AV/MS (Y/C)
Y/C 1chip
IC3001 NN1168AF
IC3002 JCP0054
IC3003 TL6850AP
IC3004 JCY0030-KE
IC3005 M51383AP
IC3006 NN1024AP
IC3011 HA11809ZFP-KE
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF8
WF9
WF10
WF11
WF12
WF13
WF14
WF15
WF16
WF17
TO SYSCON,JACK CN211,CN210 (Page 4-32,38)
CN103 [28] IF_VY_OT
CN102 [7] DATE_FR
[6] DATE
[9] VO_FR
[8] VO_DATA
[5] S_DATA
[4] S_CLK
TO MECHACON/SERVO (Page 4-19)
S_DET_H
TO SYSCON CN211 (Page 4-32)
CN102 [17] DA_EE_PB
[16] DA_CARR
[15] DA_DEV
[14] DA_W/D
[13] DA_SUB_E
[12] DA_PILOT
[11] DA_S_BND
TO MECHACON/SERVO (Page 4-18)
V_PULSE
V_PLS_ON
V_A_MUTE
YNR_PLS
V_PB_L
TO PROCESS CN210 (Page 4-34)
CN103 [38] CAM_Y
[36] CAM_C
TO MECHACON/SERVO (Page 4-19)
V_FF
TO REAR, CN601 (Page 4-56)
CN104
[3] REG_5V
[6,7] GND
TO JACK, CN210 (Page 4-38)
CN103
[9] C_OUT
[6,7] VO_GND
[8] V_OUT
[5] Y_OUT
ME_OUT
SE_IN
MOD_OUT
PI_BURST
V_TP_FM
TO PRE/REC & FLY. ERASE CN6 (Page 4-51)
CN101
V_PB_FM [7]
V_REC_FM [10]
V_PB_CU [4]
V_REC_CU [8]
S-VHS
VHS
A
B
C
D
E
F
G
H
1
2
3
4
5

NOTE : For Y/C waveforms, please refer to page 4-73.

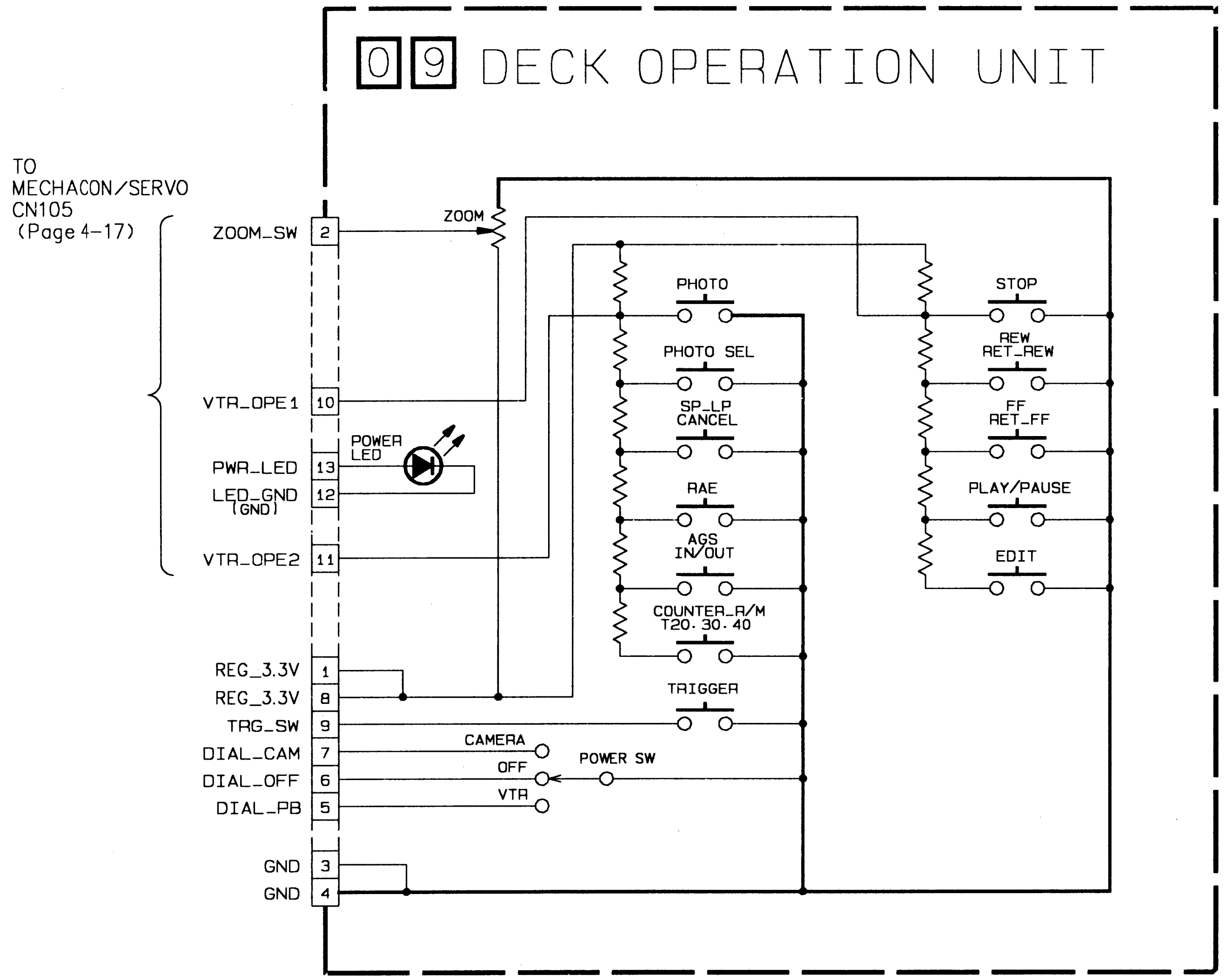
4.8 AUDIO SCHEMATIC DIAGRAM



01 AV/MS (AUDIO)
IC2101
JCY0040
Rch
(1.8MHz)
Lch
(1.4MHz)
TO A/C HEAD
CN107
2Pin AH_REC
3Pin AH_PB
4Pin AE+
5Pin A_GND
TO MIC AMP
CN2202 (Page 4-60)
CN108
2Pin MIC_AU/L
3Pin A_GND
4Pin MIC_AU/R
1Pin A_REG_5V
TO REAR, CN601
(Page 4-56)
REG_5V CN104(AV/MS PWB) 3Pin
GND CN104(AV/MS PWB) 6, 7Pin
TO JACK, CN210
(Page 4-38)
AO_SIG/L 12Pin
AO_SIG/R 15Pin
AO_GND 13, 14Pin
(OPEN)
A_P_MUTE 11Pin
FMA_FO CN103 23Pin (OPEN)
TO PRE/REC & FLY. ERASE
CN6 (Page 4-51)
CN101
A_PB_FM 20Pin
A_REC_FM 18Pin
FM_GND 19Pin
(OPEN)
TO MECHACON/SERVO
(Page 4-18)
H_RC_MUT IC1001 19Pin
A_BIAS_L IC1002 8Pin
(H:5V) (IC1001 18Pin)
A_FF IC1001 14Pin
HIFI_DET IC1001 48Pin
TO SYSCON, CN210,CN211
(Page 4-32)
CN102
S_DATA 5Pin ← (IC109 6Pin)
S_CLK 4Pin ← (IC109 8Pin)
A_CS 33Pin ← (IC101 46Pin)
A_MUTE 34Pin ← (IC101 37Pin)
A_FO/R 18Pin ← (IC110 18Pin)
A_FO/L 19Pin ← (IC110 17Pin)
D_PWR_ON CN103 30Pin ← (IC101 56Pin)
A_REG_5V
OSC_GND
LIN_GND
A_FO/R
A_BIAS_L
5V_VCC1.2
MIC_AU/L
A_MUTE
AO_SIG/L
AO_SIG/R
A_REG_5V
D_PWR_ON
AO_GND
A_P_MUTE
A_FO/L
5V_VCC1.2
T2001 NQR0002-001X
Q2001 2SC4097/QR/-X
Q2002 2SA1774/QR/-X
Q2003 2SA1774/QR/-X
Q2004 OPEN
Q2005 2SC4617/QR/-X
Q2006 2SC4617/QR/-X
Q2007 DTC144EE
Q2008 DTA114EE
Q2009 UMX1N
Q2010 OPEN
Q2011 2SC4617/QR/-X
Q2012 OPEN
Q2013 OPEN
Q2101 2SC4617/QR/-X
Q2102 2SC4617/QR/-X
Q2103 DTC114EE
Q2105 DTC144EE
Q2106
Q2107 2SC4617/QR/-X
Q2108 2SC4617/QR/-X
Q2109 2SA1774/QR/-X
Q2110 2SA1774/QR/-X
Q2111 OPEN
D2101 DAN222
TL2001
TL2002
TL2003
TL2101
TL2102
TL2103
A_REG_5V
A_GND
MIC_AU/L
A_P_MUTE
REC_OUT
PB_IN

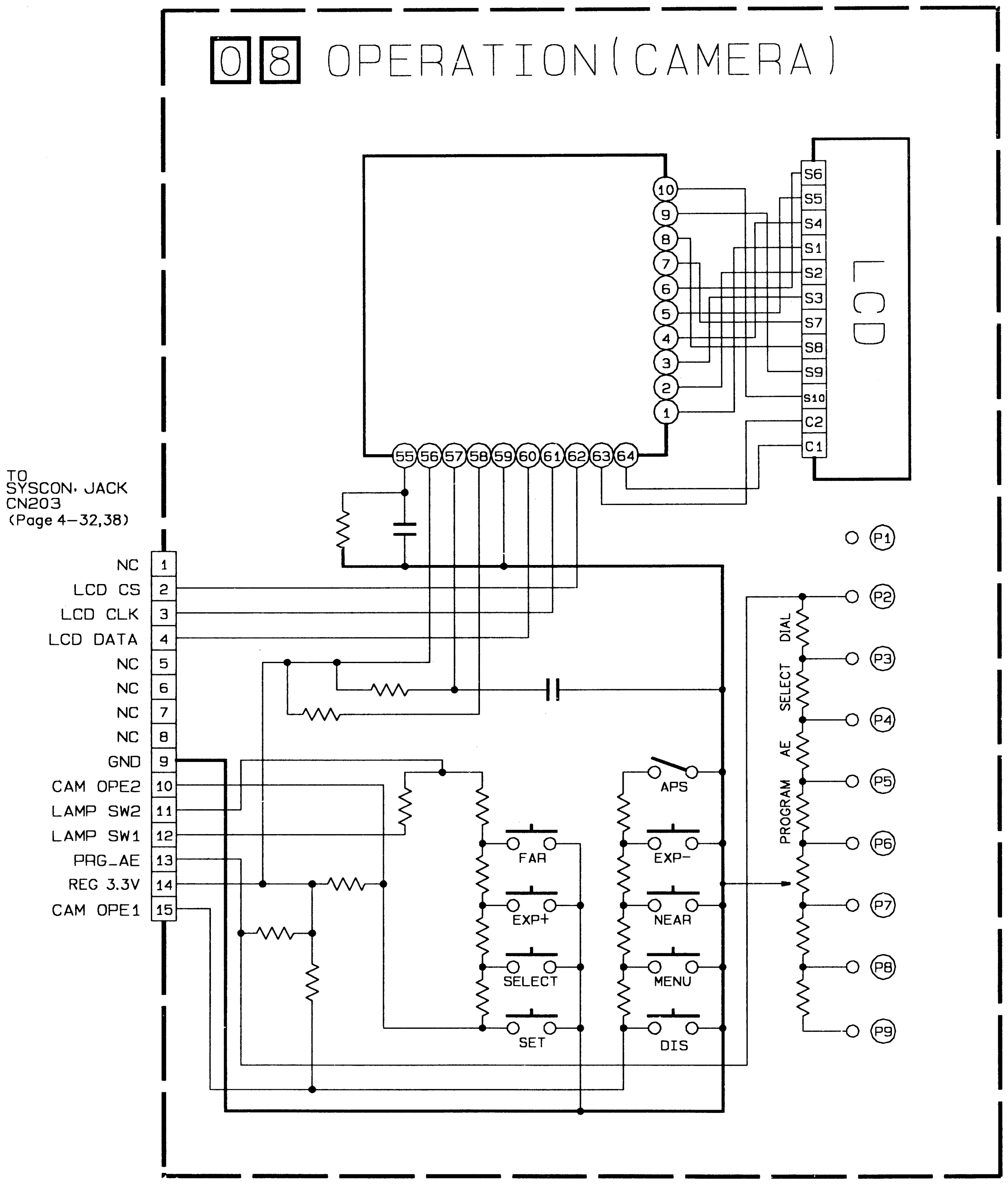
4.9 OPERATION UNIT AND OPERATION CAMERA SCHEMATIC DIAGRAMS

NOTE: This schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



09 DECK OPERATION UNIT
TO MECHACON/SERVO CN105 (Page 4-17)
ZOOM_SW 2
VTR_OPE1 10
PWR_LED 13
LED_GND (GND) 12
VTR_OPE2 11
REG_3.3V 1
REG_3.3V 8
TRG_SW 9
DIAL_CAM 7
DIAL_OFF 6
DIAL_PB 5
GND 3
GND 4
ZOOM
POWER LED
PHOTO
PHOTO SEL
SP_LP CANCEL
RAE
AGS IN/OUT
COUNTER_R/M T20.30.40
TRIGGER
CAMERA
OFF
VTR
POWER SW
STOP
REW RET_REW
FF RET_FF
PLAY/PAUSE
EDIT

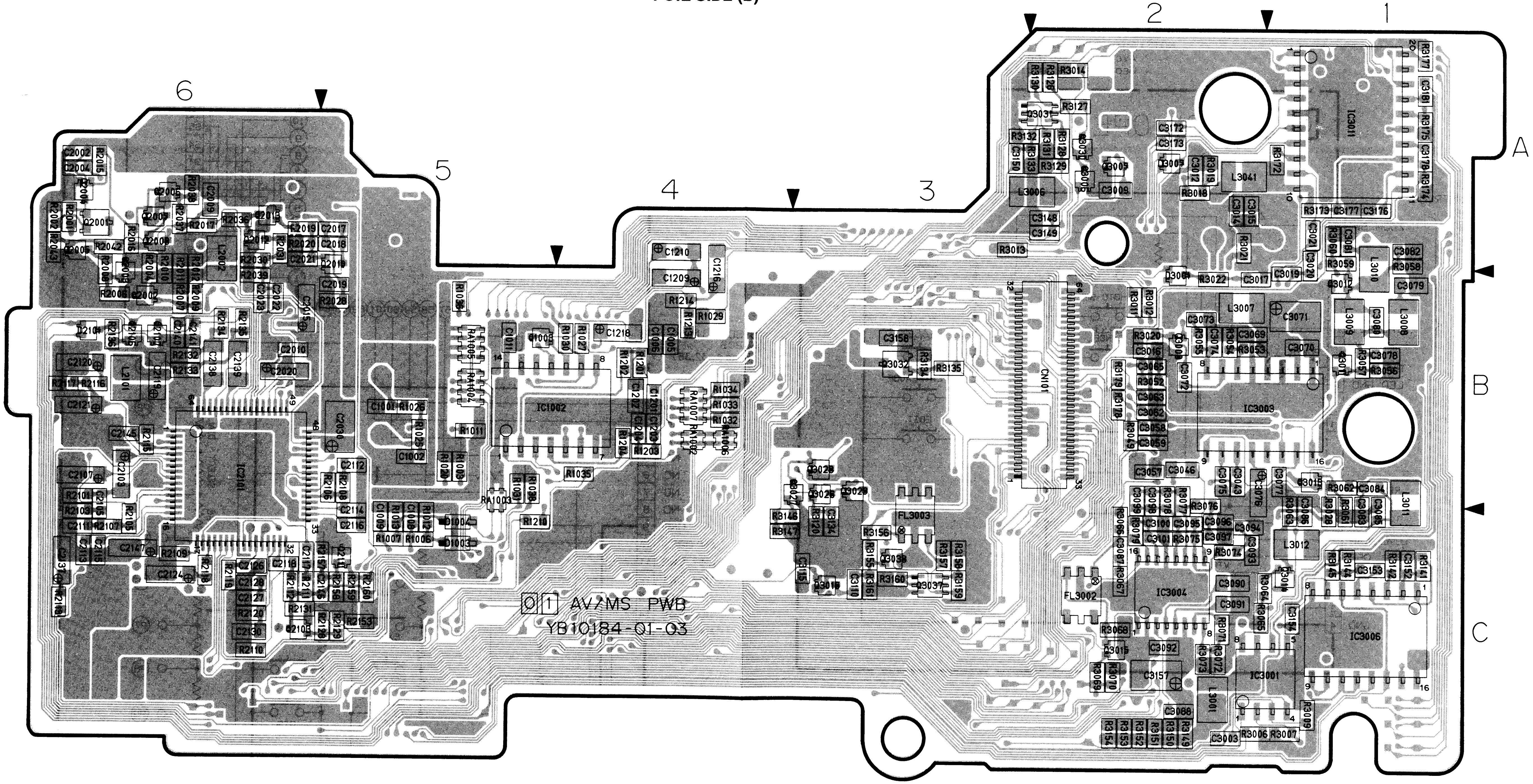
NOTE: This schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



08 OPERATION (CAMERA)
LCD
S6
S5
S4
S1
S2
S3
S7
S8
S9
S10
C2
C1
10
9
8
7
6
5
4
3
2
1
55
56
57
58
59
60
61
62
63
64
TO SYSCON, JACK CN203 (Page 4-32,38)
NC 1
LCD CS 2
LCD CLK 3
LCD DATA 4
NC 5
NC 6
NC 7
NC 8
GND 9
CAM OPE2 10
LAMP SW2 11
LAMP SW1 12
PRG_AE 13
REG 3.3V 14
CAM OPE1 15
P1
P2
P3
P4
P5
P6
P7
P8
P9
DIAL
SELECT
AE
PROGRAM
APS
FAR
EXP-
EXP+
NEAR
SELECT
MENU
SET
DIS

4.10 AV/MS CIRCUIT BOARD

FOIL SIDE (B)


1
2
3
4
5
6
A
B
C
IC3011
IC3003
IC3004
IC3006
IC3001
IC1002
IC2101
CN101
FL3002
FL3003
L3041
L3007
L3006
L3012
L3001
L2101
01 AV/MS PWB
YB10184-01-03

COMPONENT PARTS LOCATION GUIDE (AV/MS PWB)

REF.No.	LOCATION		
CAPACITOR			
C1001	B	C	5B
C1002	B	C	5B
C1005	B	C	4B
C1006	B	C	4B
C1007	A	C	5C
C1008	B	C	5C
C1009	B	C	5C
C1010	A	C	5B
C1011	B	C	5B
C1012	A	C	4B
C1013	A	C	4B
C1014	A	C	4B
C1015	A	C	4B
C1016	A	C	4B
C1201	B	C	4B
C1202	B	C	4B
C1203	B	C	4B
C1204	B	C	4B
C1205	A	C	5A
C1206	A	C	4B
C1207	A	C	4A
C1208	A	C	4A
C1209	B	C	4B
C1210	B	C	4A
C1211	A	C	4B
C1212	A	C	5A
C1213	A	C	4B
C1214	A	C	5B
C1215	A	C	5A
C1216	B	C	4B
C1217	A	C	4B
C1218	B	C	4B
C2001	A	C	6B
C2002	B	C	6A
C2004	B	C	6A
C2006	A	C	6A
C2007	A	C	6A
C2008	A	C	6B
C2009	B	C	6A
C2010	B	C	6B
C2011	A	C	6B
C2012	A	C	5B
C2013	A	C	5B
C2014	A	C	6B
C2015	B	C	6B
C2016	A	C	6B
C2017	B	C	5A
C2018	B	C	5A
C2019	B	C	5B
C2020	B	C	6B
C2021	B	C	6B
C2022	B	C	6B
C2023	B	C	6B
C2024	A	C	6B
C2028	A	C	6B
C2029	A	C	6B
C2030	B	C	5B
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C2105	B	C	6C
C2106	A	C	6B
C2107	B	C	6B
C2108	A	C	6B
C2109	A	C	6B
C2110	A	C	6B
C2111	B	C	6C
C2112	B	C	5B
C2113	B	C	6C
C2114	B	C	5C
C2115	B	C	6C
C2116	B	C	5C
C2117	B	C	6C
C2118	B	C	6C
C2119	B	C	6B
C2120	B	C	6B
C2121	B	C	6B
C2122	A	C	6C
C2123	A	C	6B
C2124	B	C	6C
C2125	A	C	6C
C2126	B	C	6C
C2127	B	C	6C
C2128	B	C	6C
C2129	A	C	6B
C2130	B	C	6C
C2131	A	C	6B
C2132	A	C	6B
C2133	A	C	5C
C2134	A	C	6C
C2135	A	C	6C
C2136	A	C	6C
C2137	B	C	6C
C2138	B	C	6B
C2139	B	C	6B
C2140	B	C	6B
C2141	B	C	6B
C2142	A	C	6B
C2143	A	C	6B
C2144	A	C	6B
C2145	B	C	6B
C2146	B	C	5C
C2147	B	C	6C
C2148	A	C	6C
C2149	A	C	6C
C3002	A	C	1C
C3003	B	C	2C
C3004	A	C	2C
C3005	A	C	2C
C3006	A	C	2A
C3007	A	C	2A
C3008	A	C	2A
C3009	B	C	2A
C3010	A	C	2A
C3011	A	C	2A
C3012	B	C	2A
C3013	A	C	2A
C3014	B	C	2A
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C3018	A	C	1B
C3019	B	C	1B
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C3021	B	C	1A
C3022	A	C	1B
C3023	A	C	1B
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C3026	A	C	1B
C3027	A	C	1B
C3028	A	C	1B
C3029	A	C	1B
C3030	A	C	1B
C3031	A	C	1B
C3032	A	C	1B
C3033	A	C	1B
C3034	A	C	1C
C3035	A	C	1B
C3036	A	C	1C
C3037	A	C	1C
C3038	A	C	1C
C3039	A	C	1C
C3040	A	C	2C
C3041	A	C	2C
C3042	A	C	2C
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C3044	A	C	2C
C3045	A	C	2C
C3046	B	C	2B
C3047	A	C	2C
C3048	A	C	2C
C3049	A	C	2C
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C3051	A	C	2C
C3052	A	C	2C
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C3055	A	C	2C
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C3058	B	C	2B
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C3061	A	C	3B
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C3063	B	C	2B
C3064	A	C	2B
C3065	B	C	2B
C3066	A	C	2B
C3067	A	C	2B
C3068	A	C	3B
C3069	B	C	2B
C3070	B	C	1B
C3071	B	C	1B
C3072	B	C	2B
C3073	B	C	2B
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C3075	B	C	2B
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C3078	B	C	1B
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C3083	B	C	1C
C3084	B	C	1B
C3085	B	C	1C
C3086	B	C	1C
C3087	B	C	2C
C3088	B	C	2C
C3089	A	C	2C
C3090	B	C	2C
C3091	B	C	2C
C3092	B	C	2C
C3093	B	C	2C
C3094	B	C	2C
C3095	B	C	2C
C3096	B	C	2C
C3097	B	C	2C
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C3100	B	C	2C
C3101	B	C	2C
C3102	A	C	2C
C3103	A	C	4C
C3104	A	C	3B
C3105	A	C	3C
C3106	A	C	3C
C3107	A	C	3C
C3108	A	C	3C
C3109	A	C	3C
C3110	B	C	3C
C3111	A	C	3C
C3112	A	C	3C
C3113	A	C	3C
C3114	A	C	4C
C3115	B	C	3C
C3116	A	C	3C
C3117	A	C	3C
C3118	A	C	3C
C3119	A	C	3C
C3120	A	C	3C
C3121	A	C	3C
C3122	A	C	3C
C3123	A	C	4B
C3124	A	C	3B
C3125	A	C	3B
C3126	A	C	3B
C3127	A	C	3B
C3128	A	C	3B
C3129	A	C	3B
C3130	A	C	3B
C3131	A	C	3B
C3132	A	C	3B
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C3134	B	C	3C
C3135	A	C	3C
C3136	A	C	3C
C3137	A	C	3C
C3138	A	C	3C
C3139	A	C	3C
C3140	A	C	3C
C3141	A	C	2A
C3142	A	C	3A
C3143	A	C	2A
C3144	A	C	3A
C3145	A	C	2A
C3148	B	C	2A
C3149	B	C	2A
C3150	B	C	3A
C3151	A	C	1C
C3152	B	C	1C
C3153	B	C	1C
C3154	B	C	1C
C3155	A	C	1C
C3156	A	C	1C
C3157	B	C	2C
C3158	B	C	3B
C3171	A	C	2A
C3172	B	C	2A
C3173	B	C	2A
C3174	A	C	1A
C3175	A	C	1A
C3176	B	C	1A
C3177	B	C	1A
C3178	B	C	1A
C3179	A	C	1A
C3180	A	C	1A
C3181	B	C	1A
C3182	A	C	2A
CONNECTOR			
CN101	B	C	3B
CN102	A	C	5C
CN103	A	C	2C
CN104	A	C	2A
CN105	A	C	1A
CN106	A	C	1A
CN107	A	C	6A
CN108	A	C	6C
DIODE			
D1002	A	C	5C
D1003	B	C	5C
D1004	B	C	5C
D2101	B	C	6B
D3001	B	C	2B
D3002	A	C	4C
D3006	A	C	2A
D3007	B	C	2A
IC			
IC1001	A	C	4B
IC1002	B	C	5B
IC1003	A	C	5C
IC2101	B	C	6B
IC3001	B	C	1C
IC3002	A	C	2B
IC3003	B	C	2B
IC3004	B	C	2C
IC3005	A	C	3C
IC3006	B	C	1C
IC3011	B	C	1A
COIL			
L2001	A	C	6B
L2002	B	C	6B
L2101	B	C	6B
L2102	A	C	6C
L2103	A	C	6B
L3001	B	C	2C
L3002	A	C	2C
L3003	A	C	3B
L3004	A	C	2B
L3005	A	C	2B
L3006	B	C	2A
L3007	B	C	2B
L3008	B	C	1B
L3009	B	C	1B
L3010	B	C	1B
L3011	B	C	1B
L3012	B	C	1C
L3014	A	C	4C
L3015	A	C	3B
L3016	A	C	4C
L3017	A	C	3C
L3018	A	C	3C
L3019	A	C	3C
L3020	A	C	3B
L3021	A	C	3B
L3022	A	C	3B
L3023	A	C	3B
L3024	A	C	3B
L3025	A	C	3C
L3026	A	C	2A
L3027	A	C	3A
L3030	A	C	1C
L3041	B	C	2A
TRANSISTOR			
Q1001	A	C	4B
Q1002	A	C	4A
Q1003	B	C	5B
Q1201	A	C	5B
Q1202	A	C	5A
Q2001	B	C	6A
Q2002	B	C	6B
Q2003	B	C	6B
Q2004	B	C	6A
Q2005	B	C	6A
Q2006	B	C	6A
Q2007	B	C	6A
Q2008	B	C	6A
Q2009	A	C	6A
Q2010	B	C	5B
Q2011	A	C	6A
Q2012	B	C	6A
Q2013	B	C	6A
Q2101	A	C	6C
Q2102	A	C	6C
Q2103	B	C	6C
Q2105	A	C	6B
Q2106	B	C	6B
Q2107	B	C	6B
Q2108	A	C	6B
Q2109	A	C	6B
Q2110	A	C	6B
Q2111	B	C	5C
Q3006	B	C	2A
Q3007	B	C	2A
Q3008	B	C	2B
Q3009	A	C	1C
Q3010	A	C	2B
Q3011	B	C	1B
Q3012	B	C	1B
Q3013	B	C	1B
Q3014	B	C	1C
Q3015	B	C	2C
Q3016	B	C	3C
Q3017	A	C	4C
Q3018	A	C	4C
Q3019	A	C	3C
Q3020	A	C	3C
Q3021	A	C	3C
Q3022	A	C	3B
Q3023	A	C	3B
Q3024	A	C	3B
Q3025	A	C	3B
Q3026	B	C	3B
Q3027	B	C	3B
Q3028	B	C	3B
Q3029	B	C	3B
Q3030	B	C	2A
Q3031	B	C	2A
Q3032	B	C	3B
Q3033	A	C	1C
Q3037	B	C	3C
Q3038	B	C	3C

REF.No.	LOCATION		
RESISTOR			
R1001	A	C	4C
R1002	A	C	5B
R1003	B	C	5B
R1004	A	C	5B
R1006	B	C	5C
R1007	B	C	5C
R1009	A	C	5B
R1010	A	C	5C
R1011	B	C	5B
R1012	B	C	5C
R1013	B	C	5C
R1014	A	C	4A
R1015	A	C	4A
R1017	A	C	4B
R1020	B	C	5B
R1025	B	C	5B
R1026	B	C	5B
R1027	B	C	4B
R1028	A	C	4C
R1029	B	C	4B
R1030	B	C	4B
R1031	B	C	5B
R1032	B	C	4B
R1033	B	C	4B
R1034	B	C	4B
R1035	B	C	4B
R1036	B	C	5B
R1037	A	C	5B
R1038	B	C	5B
R1047	A	C	4B
R1201	B	C	4B
R1202	B	C	4B
R1203	B	C	4B
R1204	B	C	4B
R1205	A	C	5A
R1207	A	C	5B
R1208	A	C	5B
R1209	A	C	5A
R1210	B	C	5C
R1211	A	C	4B
R1212	A	C	4B
R1213	B	C	4B
R1214	B	C	4B
R2001	B	C	6A
R2002	B	C	6A
R2003	A	C	6A
R2004	B	C	6B
R2006	B	C	6B
R2007	B	C	6B
R2008	B	C	6B
R2009	B	C	6B
R2010	B	C	6B
R2011	B	C	6B
R2012	B	C	6B
R2013	A	C	6A
R2014	A	C	6A
R2015	B	C	6A
R2016	B	C	6A
R2017	B	C	6A
R2018	A	C	6B
R2019	B	C	6A
R2020	B	C	6A
R2021	A	C	6B
R2022	A	C	6B
R2023	A	C	6B
R2024	A	C	6B
R2025	A	C	6B
R2026	A	C	6B
R2027	A	C	6A
R2028	B	C	5B
R2029	A	C	6A
R2030	B	C	6B
R2031	B	C	6A
R2033	A	C	6A
R2034	A	C	6A
R2035	A	C	6A
R2036	B	C	6A
R2037	B	C	6A
R2038	B	C	6A
R2039	B	C	6B
R2042	B	C	6A
R2043	B	C	6A
R2101	B	C	6C
R2102	A	C	6B
R2103	B	C	6C
R2104	A	C	6B
R2105	B	C	6C
R2106	B	C	5B
R2107	B	C	6C
R2108	B	C	5B
R2109	B	C	6C
R2110	B	C	6C
R2111	B	C	6C
R2112	B	C	6C
R2113	B	C	6C
R2114	A	C	6B
R2115	B	C	6B
R2116	B	C	6B
R2117	B	C	6B
R2118	B	C	6C
R2119	B	C	6C
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R2123	A	C	6C
R2124	A	C	6C
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R2126	A	C	5C
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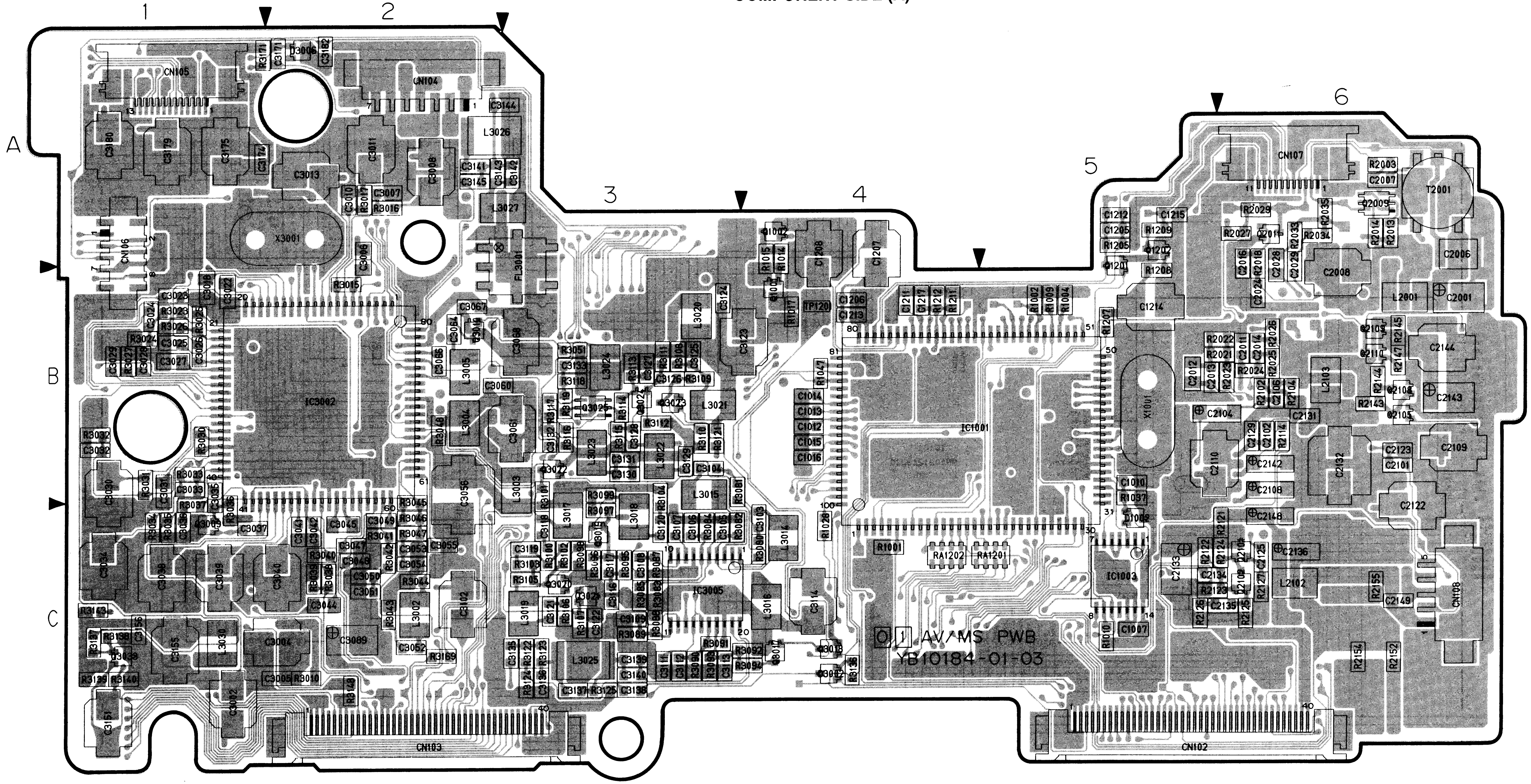
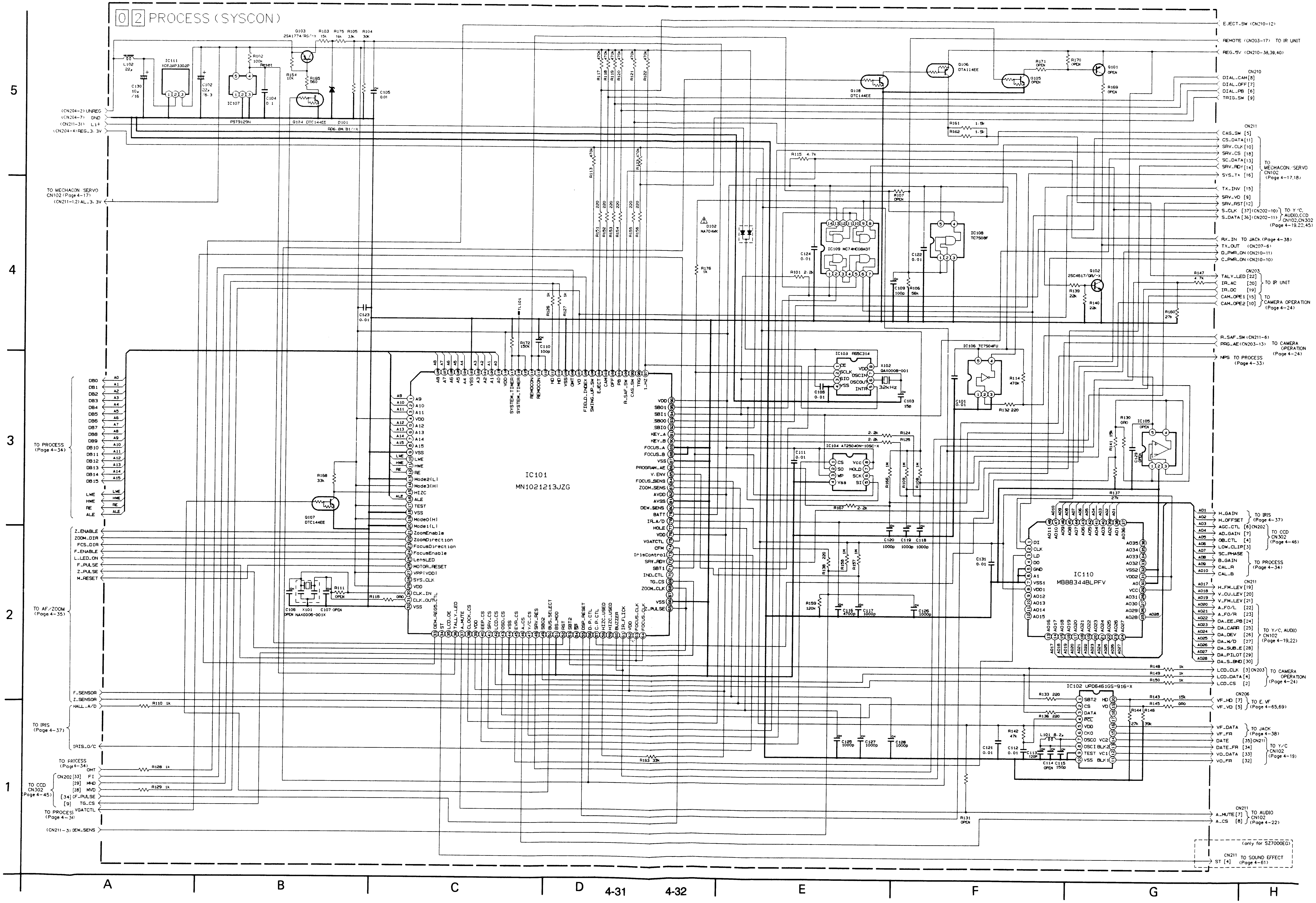
R2128	B	C	5C
R2129	B	C	5C
R2131	B	C	6C
R2132	B	C	6B
R2133	B	C	6B
R2134	B	C	6B
R2135	B	C	6B
R2136	B	C	6B
R2143	A	C	6B
R2144	A	C	6B
R2145	A	C	6B
R2147	A	C	6B
R2152	A	C	6C
R2153	B	C	5C
R2154	A	C	6C
R2155	A	C	6C
R2157	B	C	5C
R2158	B	C	5C
R2159	B	C	5C
R2160	B	C	5C
R3006	B	C	2C
R3007	B	C	1C
R3009	B	C	1C
R3010	A	C	2C
R3011	B	C	2B
R3012	B	C	2B
R3013	B	C	3A
R3014	B	C	2A
R3015	A	C	2B
R3016	A	C	2A
R3017	A	C	2A
R3018	B	C	2A
R3019	B	C	2A
R3020	B	C	2B
R3021	B	C	2A
R3022	B	C	2B
R3023	A	C	1B
R3024	A	C	1B
R3025	A	C	1B
R3026	A	C	1B
R3027	A	C	1B
R3028	B	C	1C
R3030	A	C	1B
R3031	A	C	1B
R3032	A	C	1B
R3033	A	C	1B
R3034	A	C	1C
R3035	A	C	1C
R3036	A	C	1C
R3037	A	C	1C
R3038	A	C	2C
R3039	A	C	2C
R3040	A	C	2C
R3041	A	C	2C
R3042	A	C	2C
R3043	A	C	2C
R3044	A	C	2C
R3045	A	C	2C
R3046	A	C	2C
R3047	A	C	2C
R3048	A	C	2B
R3049	B	C	2B
R3051	A	C	3B
R3052	B	C	2B
R3053	B	C	2B
R3054	B	C	2B
R3055	B	C	2B
R3056	B	C	1B
R3057	B	C	1B
R3058	B	C	1A
R3059	B	C	1A
R3060	B	C	1A
R3061	B	C	1C
R3062	B	C	1B
R3063	B	C	1C
R3064	B	C	2C
R3065	B	C	2C
R3066	B	C	2C
R3067	B	C	2C
R3068	B	C	2C
R3069	B	C	2C
R3070	B	C	2C
R3071	B	C	2C
R3072	B	C	2C
R3073	B	C	2C
R3074	B	C	2C
R3075	B	C	2C
R3076	B	C	2C
R3077	B	C	2B
R3078	B	C	2B
R3079	B	C	2C
R3080	A	C	4C
R3081	A	C	4B
R3082	A	C	4C
R3083	A	C	3C
R3084	A	C	3C
R3085	A	C	3C
R3087	A	C	3C
R3088	A	C	3C
R3089	A	C	3C
R3090	A	C	3C
R3091	A	C	3C
R3092	A	C	4C
R3093	A	C	3C
R3094	A	C	4C
R3095	A	C	3C
R3096	A	C	3C
R3097	A	C	3C
R3098	A	C	3C
R3099	A	C	3B
R3100	A	C	3C
R3101	A	C	3B
R3102	A	C	3C
R3103	A	C	3C
R3104	A	C	3B
R3105	A	C	3C
R3106	A	C	3C
R3107	A	C	3C
R3108	A	C	3B
R3109	A	C	3B
R3110	A	C	3B
R3111	A	C	3B
R3112	A	C	3B
R3113	A	C	3B
R3114	A	C	3B
R3115	A	C	3B
R3116	A	C	3B
R3117	A	C	3B
R3118	A	C	3B
R3119	A	C	3B
R3120	B	C	3C
R3121	A	C	3B
R3122	A	C	3C
R3123	A	C	3C
R3124	A	C	3C
R3125	A	C	3C
R3126	B	C	2A
R3127	B	C	2A
R3128	B	C	2A
R3129	B	C	2A
R3130	B	C	2A
R3131	B	C	2A
R3132	B	C	3A
R3133	B	C	2A
R3134	B	C	3B
R3135	B	C	3B
R3136	A	C	4C
R3137	A	C	1C
R3138	A	C	1C
R3139	A	C	1C
R3140	A	C	1C
R3141	B	C	1C
R3142	B	C	1C
R3143	A	C	1C
R3144	B	C	1C
R3145	B	C	1C
R3146	B	C	4C
R3147	B	C	4C
R3148	A	C	2C
R3149	B	C	2C
R3150	B	C	2C
R3151	B	C	2C
R3152	B	C	2C
R3153	B	C	2C
R3154	B	C	2C
R3155	B	C	3C
R3156	B	C	3C
R3157	B	C	3C
R3158	B	C	3C
R3159	B	C	3C
R3160	B	C	3C
R3161	B	C	3C
R3169	A	C	2C
R3171	A	C	1A
R3172	B	C	1A
R3173	B	C	1A
R3174	B	C	1A
R3175	B	C	1A
R3177	B	C	1A
R3178	B	C	2B
R3179	B	C	2B
RA1002	B	C	4B
RA1003	B	C	5C
RA1004	B	C	5B
RA1005	B	C	5B
RA1006	B	C	4B
RA1007	B	C	4B
RA1201	A	C	5C
RA1202	A	C	4C
TEST POINT			
TP1201	A	C	4B
OTHER			
FL3001	A	C	3B
FL3002	B	C	2C
FL3003	B	C	3C
T2001	A	C	6A
X1001	A	D	5B
X3001	A	D	2A

COMPONENT SIDE (A)

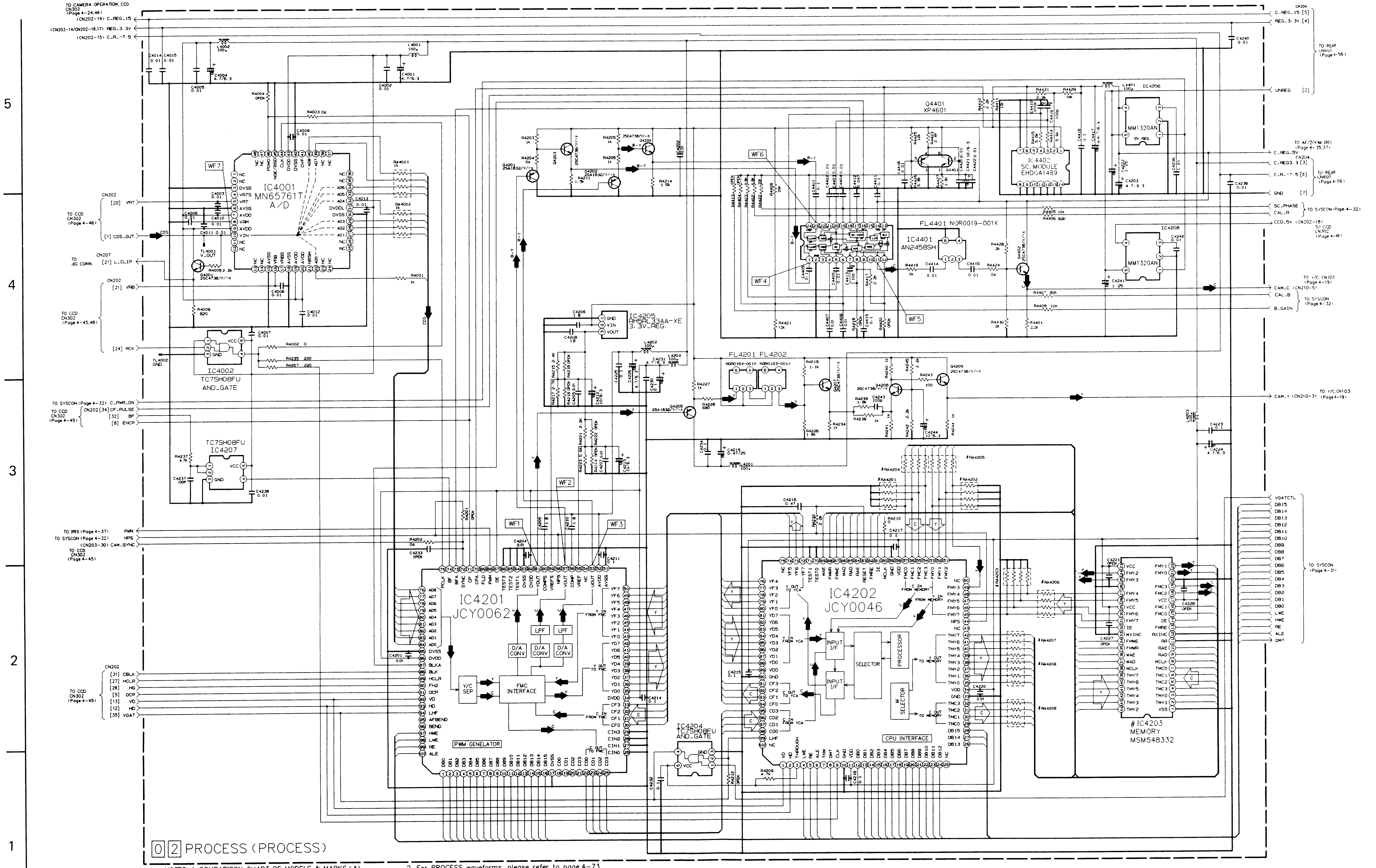

1
2
3
4
5
6
A
B
C
01 AV/MS PWB
YB10184-01-03
CN105
CN104
CN106
CN107
CN108
CN103
CN102
X3001
X1001
IC3002
IC3005
IC1001
IC1003
T2001
L3026
L3027
FL3001
L3021
L3015
L3025
L2001
L2102
RA1202
RA1201
TP120

4.11 SYSCON SCHEMATIC DIAGRAM



02 PROCESS (SYSCON)
IC101
MN1021213JZG
IC110
MB88344BLPFV
IC102 UPD6461GS-916-X
IC103 RS5C314
IC104 AT25040N-10SC-X
IC105
IC106 TC7S04FU
IC107
IC108 TC7S08F
IC109 MC74HC08ADT
IC111 XC62AP3302P
Q101
Q102 2SC4617/QR/-X
Q103 2SA1774/RS/-X
Q104 DTC144EE
Q105 OPEN
Q106 DTA114EE
Q107 DTC144EE
Q108 DTC144EE
D101 RD6.8M B1/-X
D102 MA704WK
X101 NAX0006-001X
X102 QAX0008-001
32kHz
(CN204-2) UNREG
(CN204-7) GND
(CN211-31) L1+
(CN204-4) REG_3.3V
TO MECHACON SERVO CN102 (Page 4-17)
(CN211-1,2) AL_3.3V
TO PROCESS (Page 4-34)
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DB8
DB9
DB10
DB11
DB12
DB13
DB14
DB15
LWE
HWE
RE
ALE
Z_ENABLE
ZOOM_DIR
FCS_DIR
F_ENABLE
L_LED_ON
F_PULSE
Z_PULSE
M_RESET
TO AF/ZOOM (Page 4-35)
F_SENSOR
Z_SENSOR
HALL_A/D
TO IRIS (Page 4-37)
IRIS_O/C
OMT
FI
MHD
MVD
CF_PULSE
TG_CS
VGATCTL
TO CCD CN302 (Page 4-45)
(CN211-3) DEW_SENS
EJECT_SW (CN210-12)
REMOTE (CN203-17) TO IR UNIT
REG_5V (CN210-38,39,40)
CN210
DIAL_CAM [8]
DIAL_OFF [7]
DIAL_PB [6]
TRIG_SW [9]
CN211
CAS_SW [5]
CS_DATA [11]
SRV_CLK [10]
SRV_CS [18]
SC_DATA [13]
SRV_RDY [14]
SYS_TX [16]
TO MECHACON/SERVO CN102 (Page 4-17,18)
TX_INV [15]
SRV_VD [9]
SRV_RST [12]
S_CLK [37] (CN202-10)
S_DATA [36] (CN202-11)
TO Y/C, AUDIO, CCD CN102, CN302 (Page 4-19,22,45)
RX_IN TO JACK (Page 4-38)
TX_OUT (CN207-6)
D_PWR_ON (CN210-11)
C_PWR_ON (CN210-10)
CN203
TALY_LED [22]
IR_AC [20]
IR_DC [19]
TO IR UNIT
CAM_OPE1 [15]
CAM_OPE2 [10]
TO CAMERA OPERATION (Page 4-24)
R_SAF_SW (CN211-6)
PRG_AE (CN203-13)
NPS TO PROCESS (Page 4-33)
H_GAIN
H_OFFSET
TO IRIS (Page 4-37)
AGC_CTL [6] (CN202)
AD_GAIN [7]
OB_CTL [4]
LOW_CLIP [3]
TO CCD CN302 (Page 4-46)
SC_PHASE
B_GAIN
CAL_R
CAL_B
TO PROCESS (Page 4-34)
H_FM_LEV [19]
V_CU_LEV [20]
V_FM_LEV [21]
A_FO/L [22]
A_FO/R [23]
DA_EE_PB [24]
DA_CARR [25]
DA_DEV [26]
DA_W/D [27]
DA_SUB_E [28]
DA_PILOT [29]
DA_S_BND [30]
TO Y/C, AUDIO CN102 (Page 4-19,22)
LCD_CLK [3] CN203
LCD_DATA [4]
LCD_CS [2]
TO CAMERA OPERATION (Page 4-24)
CN206
VF_HD [7]
VF_VD [5]
TO E.VF (Page 4-65,69)
VF_DATA
VF_FR
TO JACK (Page 4-38)
DATE [35] CN211
DATE_FR [34]
VO_DATA [33]
VO_FR [32]
TO Y/C CN102 (Page 4-19)
A_MUTE [7]
A_CS [8]
TO AUDIO CN102 (Page 4-22)
(only for SZ7000EG)
ST [4] TO SOUND EFFECT (Page 4-61)
1
2
3
4
5
A
B
C
D
E
F
G
H

4.12 PROCESS SCHEMATIC DIAGRAM


IC4001 MN65761T A/D
IC4002 TC7SH08FU AND_GATE
TC7SH08FU IC4207
IC4205 BH6JC_33AA-XE 3.3V_REG.
IC4201 JCY0062
IC4202 JCY0046
IC4204 TC7SH08FU AND_GATE
IC4401 AN2458SH
IC4402 SC_MODULE EHDGA1489
IC4206 MM1320AN
IC4208 MM1320AN
# IC4203 MEMORY MSM548332
Q4401 XP4601
FL4401 NQR0019-001X
FL4201 FL4202
NQR0164-001X NQR0163-001X
WF1
WF2
WF3
WF4
WF5
WF6
WF7
Y/C SEP
FMC INTERFACE
D/A CONV
LPF
PWM GENELATOR
INPUT I/F
SELECTOR
PROCESSOR
M SELECTOR
CPU INTERFACE
TO CAMERA OPERATION, CCD CN302 (Page 4-24,46)
TO CCD CN302 (Page 4-46)
TO JIG CONN.
TO CCD CN302 (Page 4-45,46)
TO SYSCON (Page 4-32) C_PWR_ON
TO CCD CN302 (Page 4-45)
TO IRIS (Page 4-37) PWM
TO SYSCON (Page 4-32) NPS
(CN203-30) CAM_SYNC
TO REAR LN601 (Page 4-56)
TO AF/ZOOM, IRIS (Page 4-35,37)
TO SYSCON (Page 4-32)
TO CCD CN302 (Page 4-46)
TO Y/C CN103 (Page 4-19)
TO SYSCON (Page 4-31)
0 2 PROCESS (PROCESS)
5
4
3
2
1
A
B
C
D
E
F
G
H

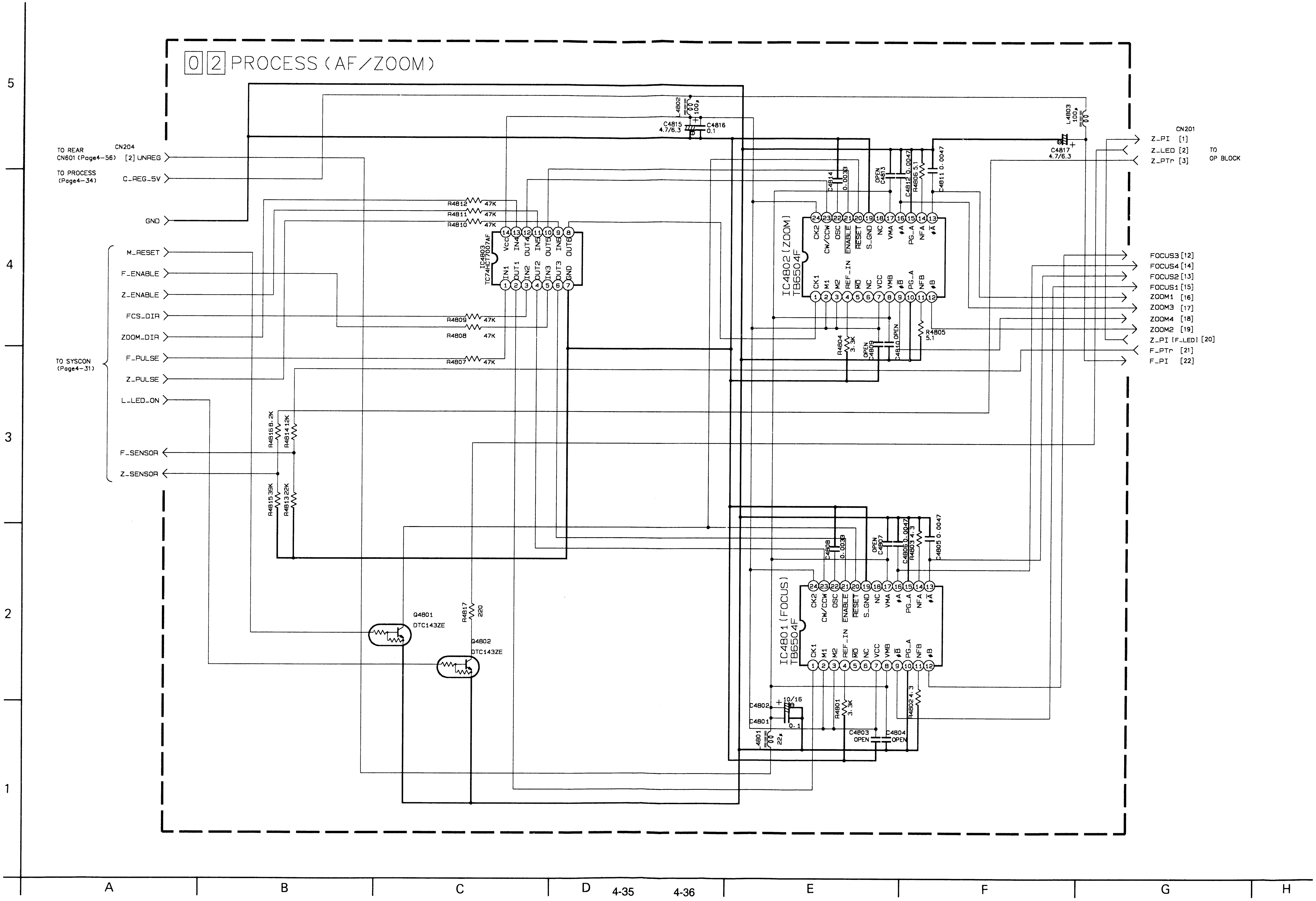
NOTES : 1. COMPARISON CHART OF MODELS & MARKS (#).

REF.NO	MODELS	
	GR-SZ5000EG	GR-SZ7000EG
IC4203	NOT USED	USED
R4412	OPEN	0
RA4201	1K	OPEN
RA4202	1K	OPEN
RA4203	1K	OPEN
RA4204	OPEN	0

REF.NO	MODELS	
	GR-SZ5000EG	GR-SZ7000EG
RA4205	OPEN	0
RA4206	OPEN	0
RA4207	OPEN	0
RA4208	OPEN	0
RA4209	OPEN	0

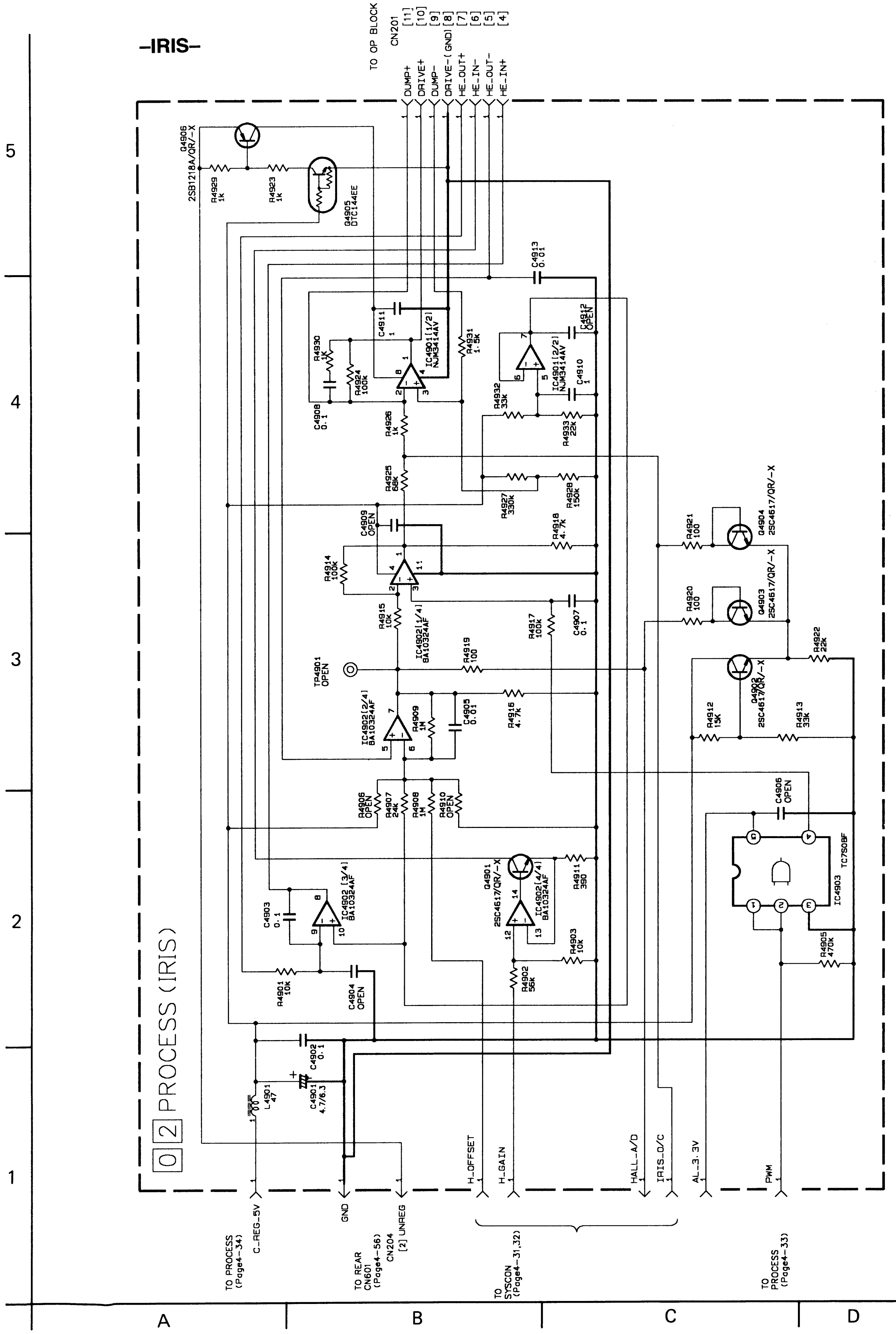
2. For PROCESS waveforms, please refer to page 4-73.

4.13 AF/ZOOM SCHEMATIC DIAGRAM

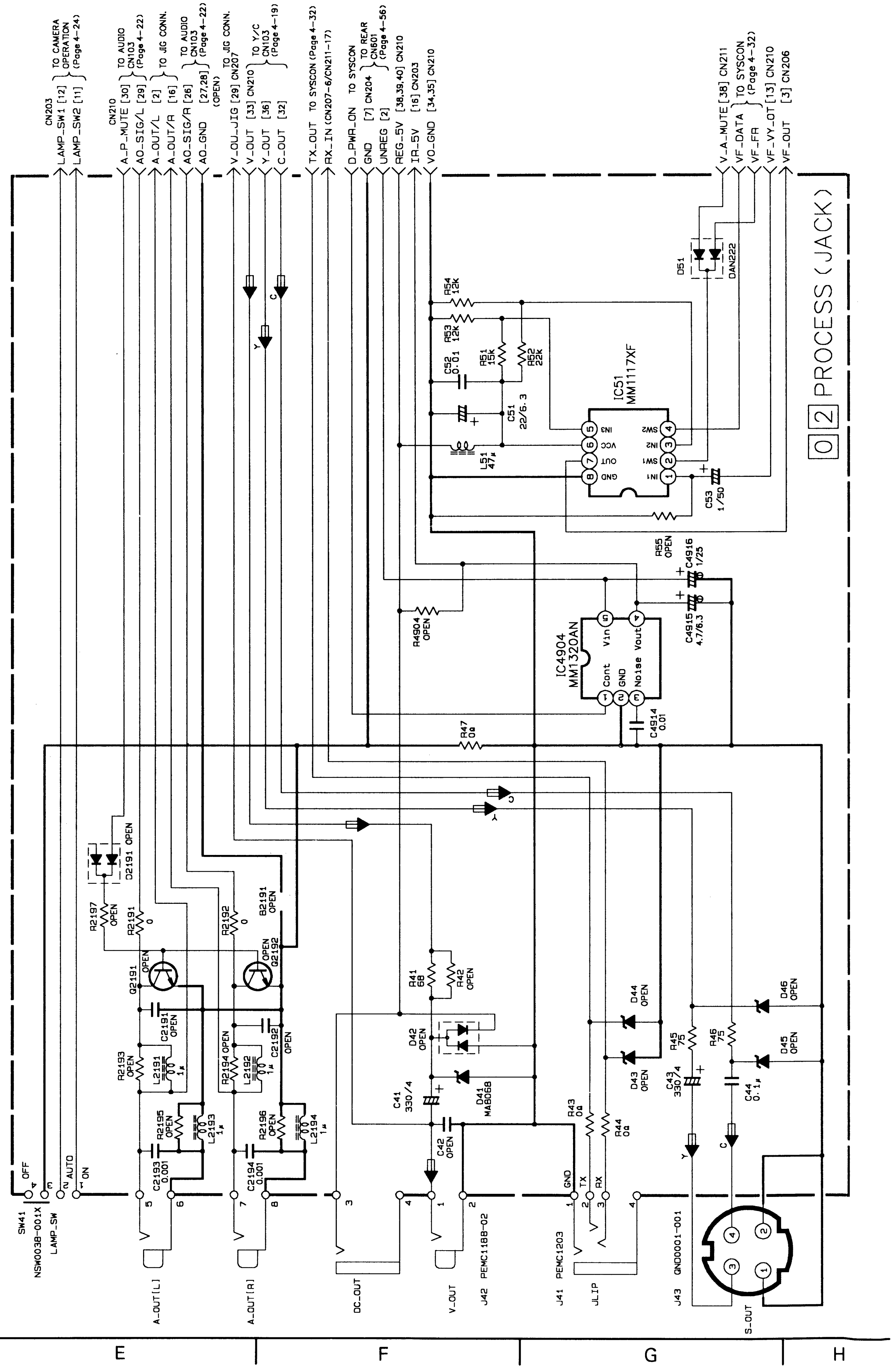

02 PROCESS (AF/ZOOM)
TO REAR CN601 (Page4-56)
CN204
[2] UNREG
TO PROCESS (Page4-34)
C_REG_5V
GND
M_RESET
F_ENABLE
Z_ENABLE
FCS_DIR
ZOOM_DIR
F_PULSE
Z_PULSE
L_LED_ON
F_SENSOR
Z_SENSOR
TO SYSCON (Page4-31)
R4812 47K
R4811 47K
R4810 47K
R4809 47K
R4808 47K
R4807 47K
IC4803 TC74HCT7007AF
Vcc IN4 OUT4 IN5 OUT5 IN6 OUT6
IN1 OUT1 IN2 OUT2 IN3 OUT3 GND
L4802 100μ
C4815 4.7/6.3
C4816 0.1
L4803 100μ
C4817 4.7/6.3
C4814 0.0033
OPEN C4813
C4812 0.0047
R4806 5.1
C4811 0.0047
IC4802 (ZOOM) TB6504F
CK2 CW/CCW OSC ENABLE RESET S.GND NC VMA φA PG_A NFA φA
CK1 M1 M2 REF_IN MO NC VCC VMB φB PG_A NFB φB
R4804 3.3K
OPEN C4809
C4810 OPEN
R4805 5.1
CN201
Z_PI [1]
Z_LED [2]
Z_PTr [3]
TO OP BLOCK
FOCUS3 [12]
FOCUS4 [14]
FOCUS2 [13]
FOCUS1 [15]
ZOOM1 [16]
ZOOM3 [17]
ZOOM4 [18]
ZOOM2 [19]
Z_PI [F_LED] [20]
F_PTr [21]
F_PI [22]
R4816 8.2K
R4814 12K
R4815 39K
R4813 22K
R4817 220
Q4801 DTC143ZE
Q4802 DTC143ZE
C4808 0.0033
OPEN C4807
C4806 0.0047
R4803 4.3
C4805 0.0047
IC4801 (FOCUS) TB6504F
CK2 CW/CCW OSC ENABLE RESET S.GND NC VMA φA PG_A NFA φA
CK1 M1 M2 REF_IN MO NC VCC VMB φB PG_A NFB φB
C4802 10/16
C4801 0.1
L4801 22μ
R4801 3.3K
R4802 4.3
C4803 OPEN
C4804 OPEN
5
4
3
2
1
A
B
C
D
E
F
G
H

4.14 IRIS AND JACK SCHEMATIC DIAGRAMS

-IRIS-

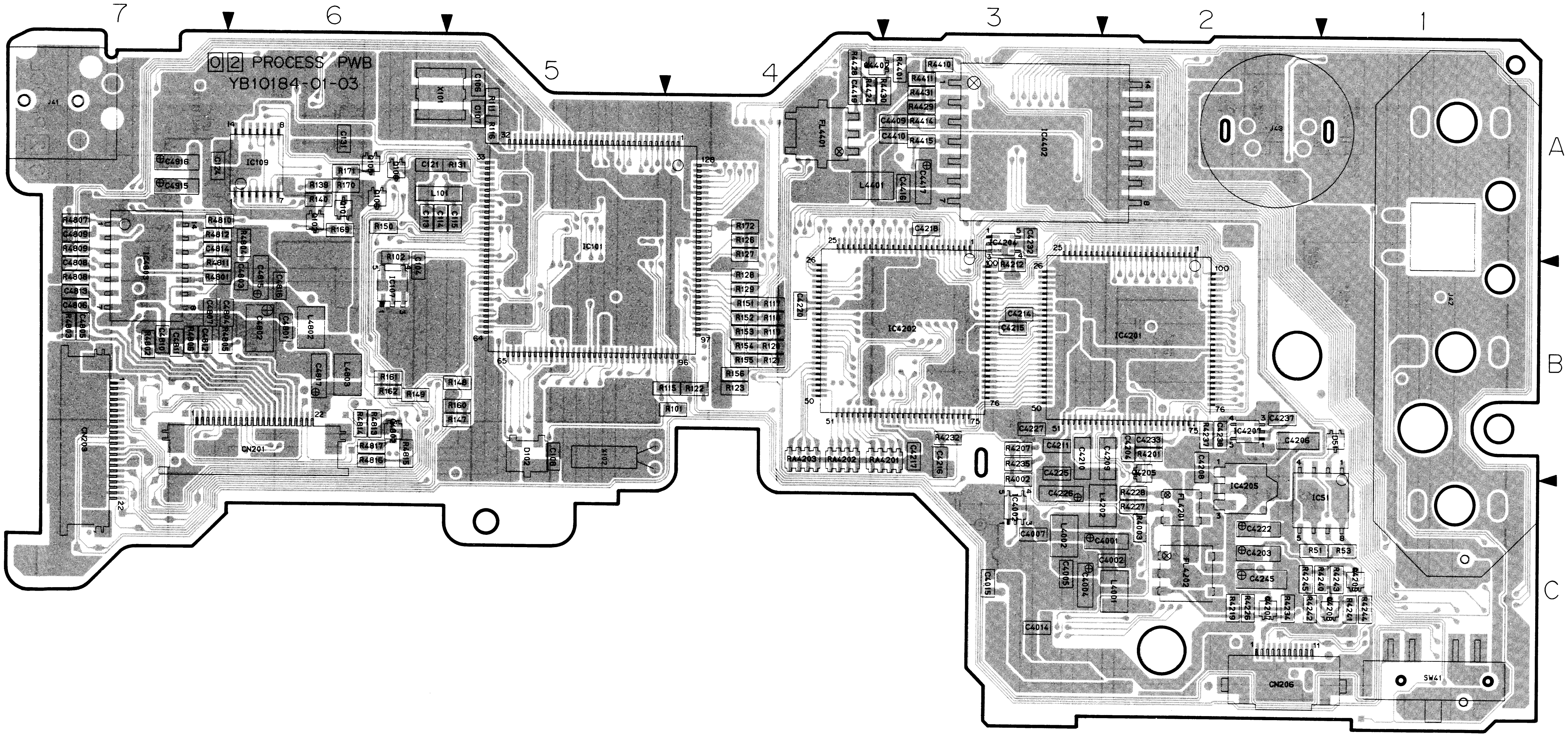

TO OP BLOCK CN201
DUMP+ [11]
DRIVE+ [10]
DUMP- [9]
DRIVE-(GND) [8]
HE_OUT+ [7]
HE_IN- [6]
HE_OUT- [5]
HE_IN+ [4]
Q4906 2SB1218A/QR/-X
R4929 1k
R4923 1k
Q4905 DTC144EE
C4913 0.01
C4911 1
IC4901(1/2) NJM3414AV
IC4901(2/2) NJM3414AV
C4912 OPEN
R4931 1.5k
C4910 1
R4930 1k
R4924 100k
C4908 0.1
R4926 1k
R4932 33k
R4933 22k
R4925 68k
R4927 330k
R4928 150k
C4909 OPEN
R4914 100k
R4918 4.7k
IC4902(1/4) BA10324AF
R4915 10k
R4917 100k
C4907 0.1
TP4901 OPEN
R4919 100
IC4902(2/4) BA10324AF
R4909 1M
C4905 0.01
R4916 4.7k
R4921 100
Q4904 2SC4617/QR/-X
R4920 100
Q4903 2SC4617/QR/-X
Q4902 2SC4617/QR/-X
R4922 22k
R4912 15k
R4913 33k
R4906 OPEN
R4907 24k
R4908 1M
R4910 OPEN
C4906 OPEN
IC4903 TC7S08F
C4903 0.1
IC4902(3/4) BA10324AF
Q4901 2SC4617/QR/-X
IC4902(4/4) BA10324AF
R4911 390
R4903 10k
R4902 56k
R4905 470k
R4901 10k
C4904 OPEN
C4902 0.1
L4901 47μ
C4901 4.7/6.3
0 2 PROCESS (IRIS)
C_REG_5V
GND
UNREG
H_OFFSET
H_GAIN
HALL_A/D
IRIS_O/C
AL_3.3V
PWM
TO PROCESS (Page4-34)
TO REAR CN601 (Page4-56) CN204 [2] UNREG
TO SYSCON (Page4-31,32)
TO PROCESS (Page4-33)
5
4
3
2
1
A
B
C
D

-JACK-


CN203
LAMP_SW1 [12]
LAMP_SW2 [11]
TO CAMERA OPERATION (Page 4-24)
CN210
A_P_MUTE [30]
AO_SIG/L [29]
A_OUT/L [2]
A_OUT/R [16]
AO_SIG/R [26]
AO_GND [27,28]
TO AUDIO CN103 (Page 4-22)
TO JIG CONN.
(OPEN)
V_OU_JIG [29] CN207
V_OUT [33] CN210
Y_OUT [36]
C_OUT [32]
TO Y/C CN103 (Page 4-19)
TX_OUT TO SYSCON (Page 4-32)
RX_IN (CN207-6/CN211-17)
D_PWR_ON TO SYSCON
GND [7] CN204
UNREG [2]
TO REAR CN601 (Page 4-56)
REG_5V [38,39,40] CN210
IR_5V [16] CN203
VO_GND [34,35] CN210
V_A_MUTE [38] CN211
VF_DATA
VF_FR
VF_VY_OT [13] CN210
VF_OUT [3] CN206
TO SYSCON (Page 4-32)
D51 DAN222
R54 12k
R53 12k
R51 15k
R52 22k
C52 0.01
C51 22/6.3
IC51 MM1117XF
IN3 VCC OUT GND SW2 IN2 SW1 IN1
L51 47μ
C53 1/50
0 2 PROCESS (JACK)
R55 OPEN
C4916 1/25
C4915 4.7/6.3
IC4904 MM1320AN
Vin Cont GND Noise Vout
R4904 OPEN
C4914 0.01
R47 0Ω
D2191 OPEN
R2197 OPEN
R2191 0
R2192 0
R2191 OPEN
Q2191 OPEN
Q2192 OPEN
C2191 OPEN
C2192 OPEN
R2193 OPEN
L2191 1μ
R2194 OPEN
L2192 1μ
R2195 OPEN
L2193 1μ
R2196 OPEN
L2194 1μ
C2193 0.001
C2194 0.001
R41 68
R42 OPEN
D42 OPEN
D41 MA8068
C41 330/4
C42 OPEN
R43 0Ω
R44 0Ω
D44 OPEN
D43 OPEN
R45 75
R46 75
D46 OPEN
D45 OPEN
C43 330/4
C44 0.1μ
Y
C
SW41 NSW0038-001X LAMP_SW
OFF AUTO ON
A_OUT(L)
A_OUT(R)
DC_OUT
V_OUT
J42 PEMC1188-02
J41 PEMC1203
JLIP
GND TX RX
J43 QNS0001-001
S_OUT
E
F
G
H

4.15 PROCESS CIRCUIT BOARD

FOIL SIDE (B)



7
6
5
4
3
2
1
A
B
C
02 PROCESS PWB
YB10184-01-03
J41
J42
J43
IC101
IC109
IC4201
IC4202
IC4205
IC4402
IC51
CN201
CN203
CN206
SW41
X101
X102
L101
L4002
L4202
L4401
L4802
L4803
FL4201
FL4202
FL4401
D102
RA4201
RA4202
RA4203

COMPONENT PARTS LOCATION GUIDE (PROCESS PWB)

REF.No.	LOCATION		
CAPACITOR			
C41	A	C	1A
C42	A	C	1A
C43	A	C	2A
C44	A	C	1A
C51	A	C	1C
C52	A	C	1C
C53	A	C	2B
C101	A	C	7A
C102	A	C	6B
C103	A	C	5C
C104	B	C	6B
C105	A	C	5B
C106	B	C	5A
C107	B	C	5A
C108	B	C	5B
C109	A	C	4A
C110	A	C	4A
C111	A	C	5A
C112	A	C	5A
C113	B	C	6A
C114	B	C	6A
C115	B	C	5A
C116	A	C	5B
C117	A	C	5B
C118	A	C	5B
C119	A	C	5B
C120	A	C	5B
C121	B	C	6A
C122	A	C	5A
C123	A	C	5B
C124	B	C	7A
C125	A	C	5B
C126	A	C	5B
C127	A	C	5B
C128	A	C	5B
C129	A	C	5C
C130	A	C	6B
C131	B	C	6A
C2191	A	C	1B
C2192	A	C	1B
C2193	A	C	1B
C2194	A	C	1B
C4001	B	C	2C
C4002	B	C	2C
C4003	A	C	2C
C4004	B	C	3C
C4005	B	C	3C
C4006	A	C	3C
C4007	B	C	3C
C4008	A	C	3C
C4009	A	C	2C
C4010	A	C	2C
C4011	A	C	3C
C4012	A	C	3C
C4013	A	C	2C
C4014	B	C	3C
C4015	B	C	3C
C4201	A	C	2B
C4202	A	C	2B
C4203	B	C	2C
C4204	B	C	2B
C4205	A	C	2C
C4206	B	C	2B
C4207	A	C	2C
C4208	B	C	2B
C4209	B	C	2B
C4210	B	C	3B
C4211	B	C	3B
C4212	A	C	2B
C4213	A	C	2C
C4214	B	C	3B
C4215	B	C	3B
C4216	B	C	3B
C4217	B	C	3B
C4218	B	C	3A
C4219	A	C	2C
C4220	B	C	4B
C4221	A	C	3B
C4222	B	C	2C
C4223	A	C	4B
C4224	A	C	4B
C4225	B	C	3C
C4226	B	C	3C
C4227	B	C	3B
C4228	A	C	3B
C4230	A	C	2B
C4231	A	C	2B
C4232	B	C	3A
C4233	B	C	2B
C4234	A	C	2C
C4236	A	C	2C
C4237	B	C	2B
C4238	B	C	2B
C4239	A	C	2C
C4240	A	C	1C
C4241	A	C	2C
C4242	A	C	2C
C4243	A	C	1C
C4244	A	C	2C
C4245	B	C	2C
C4401	A	C	3A
C4402	A	C	3A
C4403	A	C	3A
C4404	A	C	3A
C4405	A	C	3A
C4406	A	C	3A
C4407	A	C	3A
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C4409	B	C	3A
C4410	B	C	3A
C4411	A	C	3A
C4412	A	C	3A
C4413	A	C	3A
C4414	A	C	4A
C4415	A	C	3A
C4416	B	C	3A
C4417	B	C	3A
C4418	A	C	3A
C4419	B	C	4A
C4420	A	C	2A
C4421	A	C	3A
C4422	A	C	3A
C4801	B	C	6B
C4802	B	C	6B
C4803	B	C	6B
C4804	B	C	6B
C4805	B	C	7B
C4806	B	C	7B
C4807	B	C	7B
C4808	B	C	7B
C4809	B	C	7A
C4810	B	C	7B
C4811	B	C	7B
C4812	B	C	7B
C4813	B	C	7B
C4814	B	C	7B
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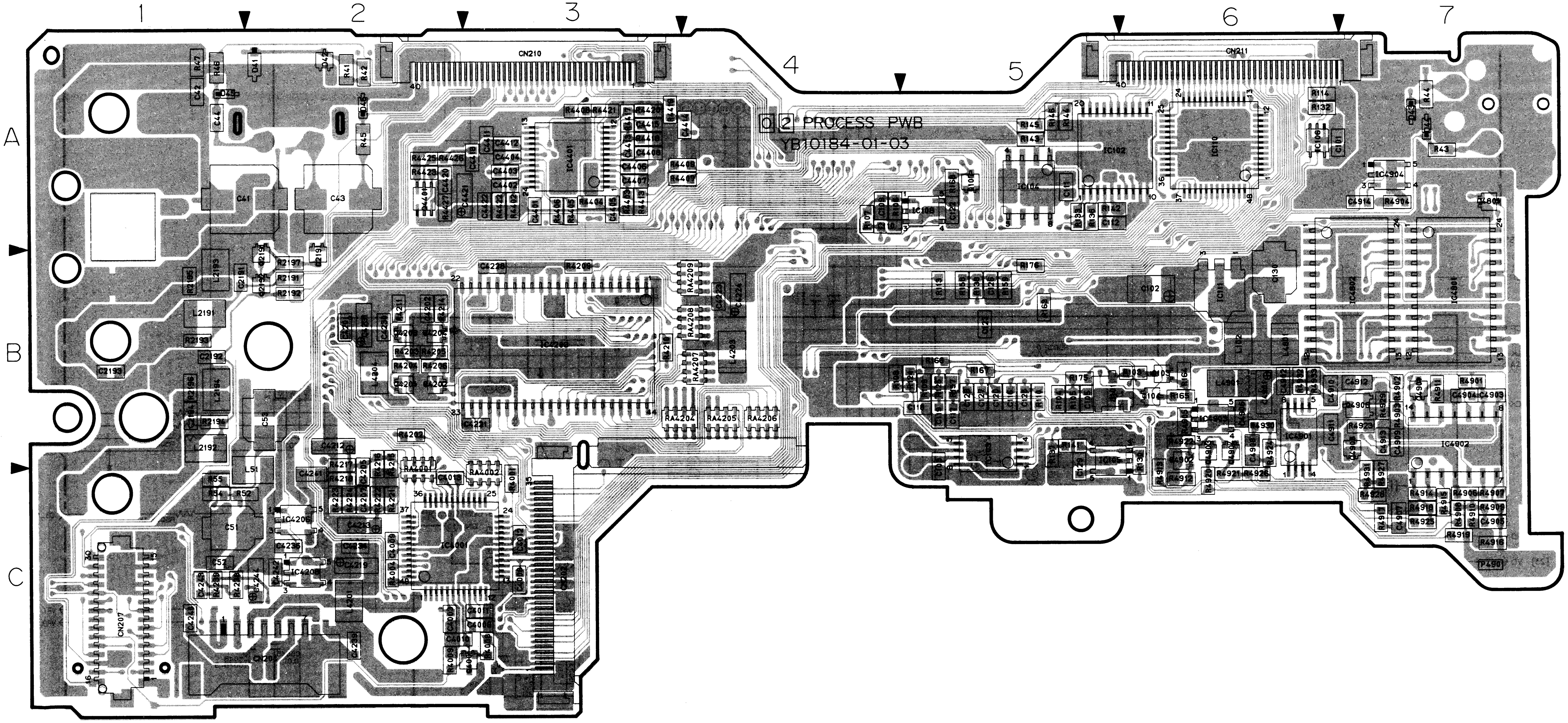
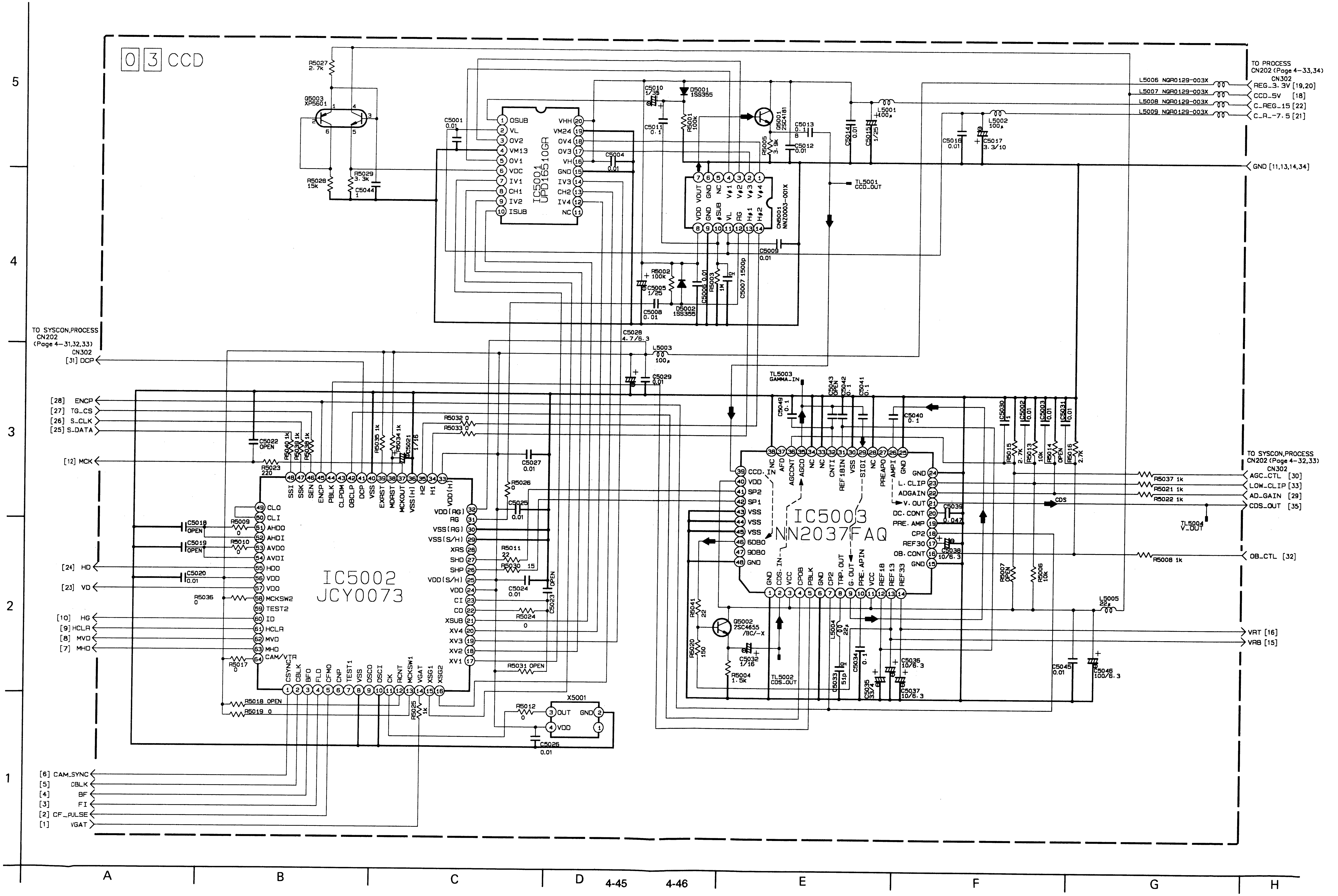
C4816	B	C	6B
C4817	B	C	6B
C4901	A	C	6B
C4902	A	C	6B
C4903	A	C	7B
C4904	A	C	7B
C4905	A	C	7C
C4906	A	C	6B
C4907	A	C	7C
C4908	A	C	6B
C4909	A	C	7B
C4910	A	C	6B
C4911	A	C	6B
C4912	A	C	7B
C4913	A	C	7B
C4914	A	C	7A
C4915	B	C	7A
C4916	B	C	7A
CONNECTOR			
CN201	B	C	7B
CN202	A	C	3C
CN203	B	C	7B
CN204	A	C	1C
CN206	B	C	2C
CN207	A	C	1D
CN210	A	C	3A
CN211	A	C	6A
DIODE			
D41	A	C	2A
D42	A	C	2A
D43	A	C	7A
D44	A	C	7A
D45	A	C	1A
D46	A	C	2A
D51	B	C	1B
D101	A	C	5B
D102	B	C	5B
D2191	A	C	2B
IC			
IC51	B	C	1C
IC101	B	C	5B
IC102	A	C	5A
IC103	A	C	5B
IC104	A	C	5A
IC105	A	C	5B
IC106	A	C	6A
IC107	B	C	6B
IC108	A	C	5A
IC109	B	C	6A
IC110	A	C	6A
IC111	A	C	6B
IC4001	A	C	2C
IC4002	B	C	3C
IC4201	B	C	2B
IC4202	B	C	3B
IC4203	A	C	3B
IC4204	B	C	3A
IC4205	B	C	2C
IC4206	A	C	2C
IC4207	B	C	2B
IC4208	A	C	2C
IC4401	A	C	3A
IC4402	B	C	3A
IC4801	A	C	7B
IC4802	A	C	7B
IC4803	B	C	7B
IC4901	A	C	6B
IC4902	A	C	7B
IC4903	A	C	6B
IC4904	A	C	7A
COIL			
L51	A	C	2C
L101	B	C	6A
L102	A	C	6B
L2191	A	C	1B
L2192	A	C	1B
L2193	A	C	1B
L2194	A	C	1B
L4001	B	C	2C
L4002	B	C	3C
L4201	A	C	2C
L4202	B	C	2C
L4203	A	C	4B
L4204	A	C	2B
L4401	B	C	4A
L4801	A	C	6B
L4802	B	C	6B
L4803	B	C	6B
L4901	A	C	6B
TRANSISTOR			
Q101	B	C	6A
Q102	B	C	6A
Q103	A	C	6B
Q104	A	C	6B
Q105	B	C	6A
Q106	B	C	6A
Q107	A	C	5A
Q108	B	C	6A
Q2191	A	C	2B
Q2192	A	C	2B
Q4001	A	C	3C
Q4201	A	C	2B
Q4202	A	C	2B
Q4203	A	C	2B
Q4204	A	C	2B
Q4205	B	C	2B
Q4207	B	C	2C
Q4208	B	C	1C
Q4209	B	C	1C
Q4401	A	C	2A
Q4402	B	C	4A
Q4801	A	C	7A
Q4802	B	C	6B
Q4901	A	C	7B
Q4902	A	C	6B
Q4903	A	C	6B
Q4904	A	C	6B
Q4905	A	C	7B
Q4906	A	C	7B
RESISTOR			
R41	A	C	2A
R42	A	C	2A
R43	A	C	7A
R44	A	C	7A
R45	A	C	2A
R46	A	C	1A
R47	A	C	1A
R51	B	C	2C
R52	A	C	1C
R53	B	C	1C
R54	A	C	1C
R55	A	C	1C
R101	B	C	4B
R102	B	C	6B
R103	A	C	6B
R104	A	C	5B
R105	A	C	5B
R106	A	C	4A
R107	A	C	4A
R108	A	C	4B
R109	A	C	5B
R110	A	C	5B
R111	B	C	5A
R113	A	C	5B
R114	A	C	6A
R115	B	C	4B

REF.No.	LOCATION			REF.No.	LOCATION			REF.No.	LOCATION			REF.No.	LOCATION		
R116	B	C	5A	R2193	A	C	1B	R4414	B	C	3A	R4926	A	C	6C
R117	B	C	4B	R2194	A	C	1B	R4415	B	C	3A	R4927	A	C	7C
R118	B	C	4B	R2195	A	C	1B	R4417	A	C	3A	R4928	A	C	7C
R119	B	C	4B	R2196	A	C	1B	R4418	A	C	3A	R4929	A	C	7B
R120	B	C	4B	R2197	A	C	2B	R4419	A	C	3A	R4930	A	C	6B
R121	B	C	4B	R4001	A	C	3C	R4420	A	C	3A	R4931	A	C	7C
R122	B	C	4B	R4002	B	C	3C	R4421	A	C	3A	R4932	A	C	6B
R123	B	C	4B	R4003	B	C	2C	R4422	A	C	3A	R4933	A	C	6B
R124	A	C	5B	R4004	A	C	2C	R4423	A	C	2A	RA4001	A	C	2C
R125	A	C	5B	R4008	A	C	3C	R4424	B	C	4A	RA4002	A	C	3C
R126	B	C	4A	R4009	A	C	2C	R4425	A	C	2A	RA4201	B	C	3B
R127	B	C	4B	R4201	B	C	2B	R4426	A	C	2A	RA4202	B	C	4B
R128	B	C	4B	R4202	A	C	2B	R4427	A	C	2A	RA4203	B	C	4B
R129	B	C	4B	R4203	A	C	2B	R4428	B	C	4A	RA4204	A	C	3B
R130	A	C	6B	R4204	A	C	2B	R4429	B	C	3A	RA4205	A	C	4B
R131	B	C	5A	R4205	A	C	2B	R4430	B	C	3A	RA4206	A	C	4B
R132	A	C	6A	R4206	A	C	2B	R4431	B	C	3A	RA4207	A	C	4B
R133	A	C	5A	R4207	B	C	3B	R4801	B	C	7B	RA4208	A	C	4B
R136	A	C	5A	R4209	A	C	3B	R4802	B	C	7B	RA4209	A	C	4B
R137	A	C	5B	R4210	A	C	3B	R4803	B	C	7B				
R138	A	C	5B	R4211	A	C	2B	R4804	B	C	6A	**TEST POINT**			
R139	B	C	6A	R4212	B	C	3B	R4805	B	C	7B				
R140	B	C	6A	R4214	A	C	2B	R4806	B	C	7B	TP4901	A	C	7C
R141	A	C	5B	R4215	A	C	2B	R4807	B	C	7A				
R142	A	C	5A	R4216	A	C	2B	R4808	B	C	7B				
R143	A	C	5A	R4217	A	C	2C	R4809	B	C	7B	**OTHER**			
R144	A	C	5A	R4218	A	C	2C	R4810	B	C	7A	FL4201	B	C	2C
R145	A	C	5A	R4219	B	C	2C	R4811	B	C	7B	FL4202	B	C	2C
R146	A	C	5A	R4221	A	C	2C	R4812	B	C	7A	FL4401	B	C	4A
R147	B	C	5B	R4222	A	C	2C	R4813	B	C	6B	J41	A	D	7A
R148	B	C	5B	R4223	A	C	2C	R4814	B	C	6B	J42	A	D	1A
R149	B	C	6B	R4224	A	C	2C	R4815	B	C	6B	J43	A	D	2A
R150	B	C	6A	R4226	B	C	2C	R4816	B	C	6B	SW41	B	C	1C
R151	B	C	4B	R4227	B	C	2C	R4817	B	C	6B	X101	B	C	6A
R152	B	C	4B	R4228	B	C	2C	R4901	A	C	7B	X102	A	D	5C
R153	B	C	4B	R4232	B	C	3B	R4902	A	C	7B				
R154	B	C	4B	R4234	B	C	2C	R4903	A	C	7B				
R155	B	C	4B	R4235	B	C	3B	R4904	A	C	7A				
R156	B	C	4B	R4237	B	C	2B	R4905	A	C	6B				
R157	A	C	5B	R4238	A	C	1C	R4906	A	C	7C				
R158	A	C	5B	R4239	A	C	1C	R4907	A	C	7C				
R159	A	C	5B	R4240	B	C	1C	R4908	A	C	7C				
R160	B	C	5B	R4241	B	C	1C	R4909	A	C	7C				
R161	B	C	6B	R4242	B	C	2C	R4910	A	C	7C				
R162	B	C	6B	R4243	B	C	1C	R4911	A	C	7B				
R163	A	C	5B	R4244	B	C	1C	R4912	A	C	6C				
R164	A	C	6B	R4245	B	C	2C	R4913	A	C	6C				
R165	A	C	6B	R4401	B	C	3A	R4914	A	C	7C				
R166	A	C	5B	R4402	A	C	3A	R4915	A	C	7C				
R167	A	C	5B	R4403	A	C	3A	R4916	A	C	7C				
R168	A	C	5A	R4404	A	C	3A	R4917	A	C	7C				
R169	B	C	6A	R4405	A	C	3A	R4918	A	C	7C				
R170	B	C	6A	R4406	A	C	3A	R4919	A	C	7C				
R171	B	C	6A	R4407	A	C	4A	R4920	A	C	6C				
R172	B	C	4A	R4408	A	C	3A	R4921	A	C	6C				
R175	A	C	5B	R4409	A	C	4A	R4922	A	C	6B				
R176	A	C	5B	R4410	B	C	3A	R4923	A	C	7B				
R2191	A	C	2B	R4411	B	C	3A	R4924	A	C	6B				
R2192	A	C	2B	R4413	A	C	3A	R4925	A	C	7C				

COMPONENT SIDE (A)

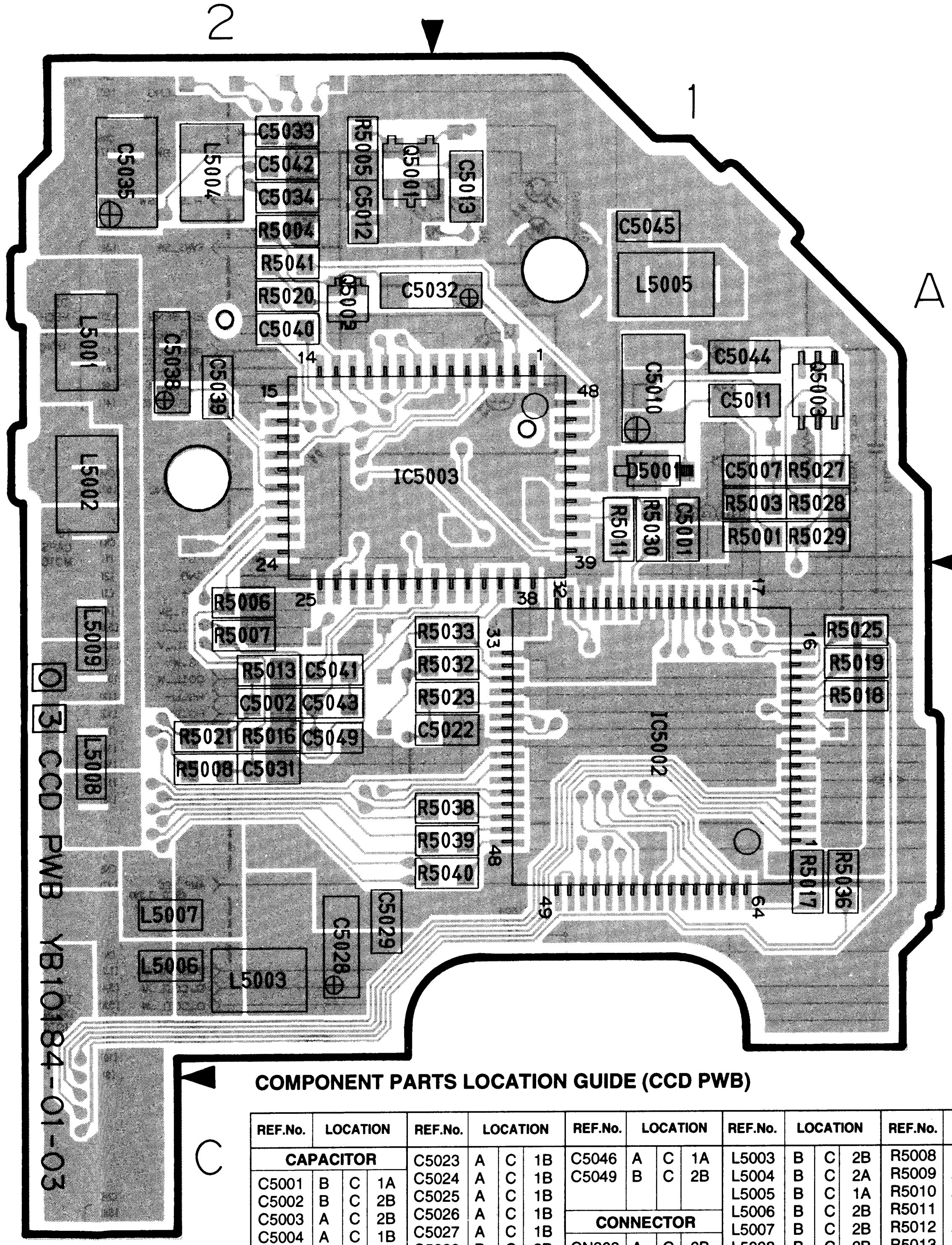

1
2
3
4
5
6
7
A
B
C
CN210
CN211
Q2 PROCESS PWB
YB10184-01-03
IC4401
IC102
IC110
IC4201
IC4001
IC4902
IC4901
IC4304
CN207
C41
C43
L2191
L2192
C51
C55
L51
RA4204
RA4205
RA4206
RA4001
RA4002

4.16 CCD SCHEMATIC DIAGRAM


03 CCD
TO PROCESS CN202 (Page 4-33,34) CN302
L5006 NQR0129-003X REG_3.3V [19,20]
L5007 NQR0129-003X CCD_5V [18]
L5008 NQR0129-003X C_REG_15 [22]
L5009 NQR0129-003X C_R_-7.5 [21]
GND [11,13,14,34]
IC5001 UPD16510GR
IC5002 JCY0073
IC5003 NN2037FAQ
CN5001 NN20003-001X
X5001
Q5003 XP5601
Q5001 2SC4181
Q5002 2SC4655 /BC/-X
D5001 1SS355
D5002 1SS355
TL5001 CCD_OUT
TL5002 CDS_OUT
TL5003 GAMMA_IN
TL5004 V_OUT
TO SYSCON,PROCESS CN202 (Page 4-31,32,33) CN302
[31] DCP
[28] ENCP
[27] TG_CS
[26] S_CLK
[25] S_DATA
[12] MCK
[24] HD
[23] VD
[10] HG
[9] HCLR
[8] MVD
[7] MHD
[6] CAM_SYNC
[5] CBLK
[4] BF
[3] FI
[2] CF_PULSE
[1] VGAT
TO SYSCON,PROCESS CN202 (Page 4-32,33) CN302
AGC_CTL [30]
LOW_CLIP [33]
AD_GAIN [29]
CDS_OUT [35]
OB_CTL [32]
VRT [16]
VRB [15]
5
4
3
2
1
A
B
C
D
E
F
G
H

4.17 CCD AND UPPER DRUM CIRCUIT BOARDS

FOIL SIDE (B)


2
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A
B
C
C5035
L5004
C5033
C5042
C5034
R5004
R5041
R5020
C5040
R5005
C5012
Q5001
C5013
C5009
C5032
C5045
L5005
L5001
C5038
C5039
C5044
C5011
Q5003
C5010
IC5003
D5001
C5007
R5027
R5003
R5028
R5001
R5029
R5011
R5030
C5001
L5002
L5009
R5006
R5007
R5013
C5041
C5002
C5043
R5021
R5016
C5049
R5008
C5031
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R5032
R5023
C5022
R5025
R5019
R5018
IC5002
R5038
R5039
R5040
R5017
R5036
L5008
L5007
L5006
L5003
C5028
C5029
03 CCD PWB YB10184-01-03
14
15
1
48
24
25
38
39
32
33
17
16
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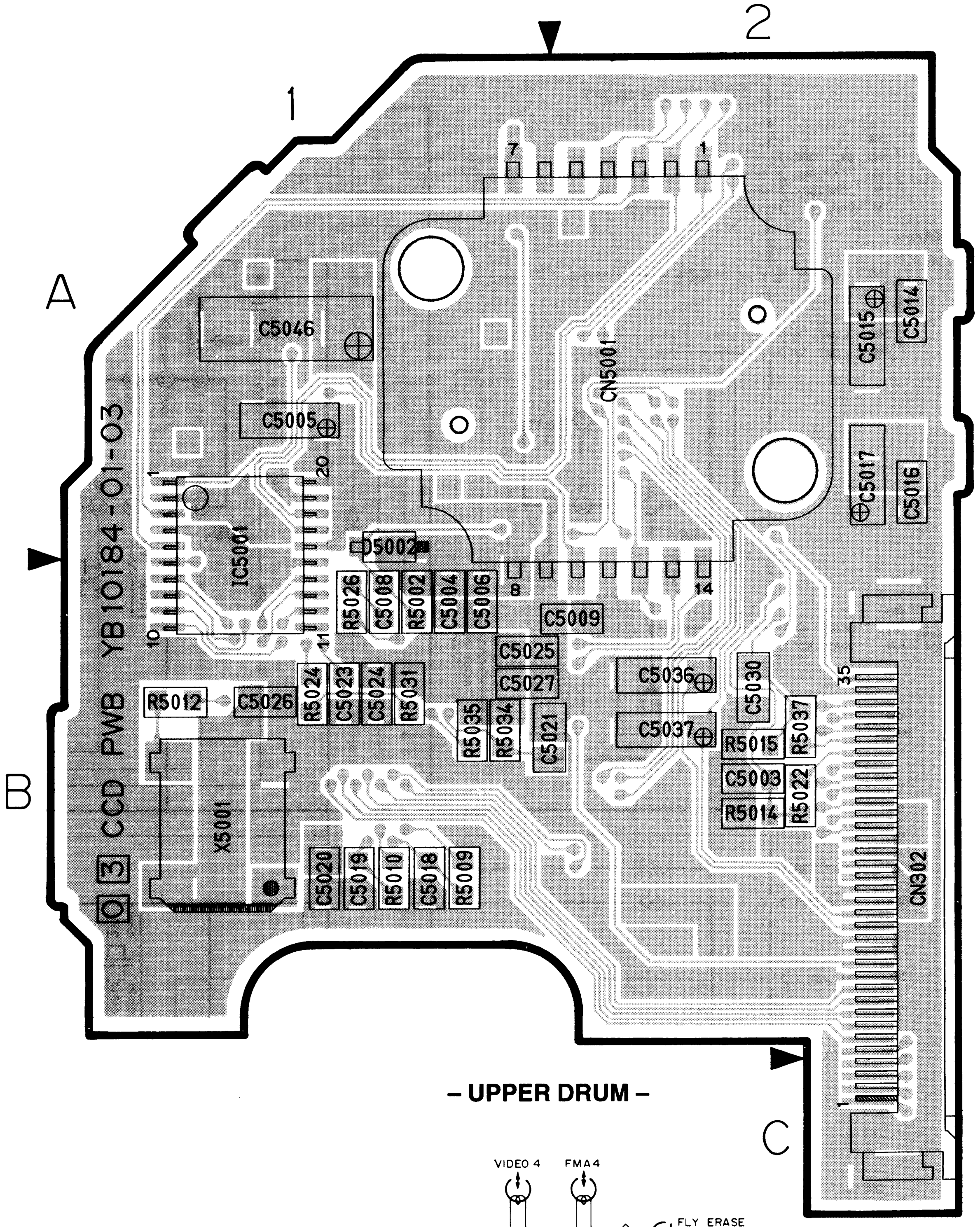
49
64

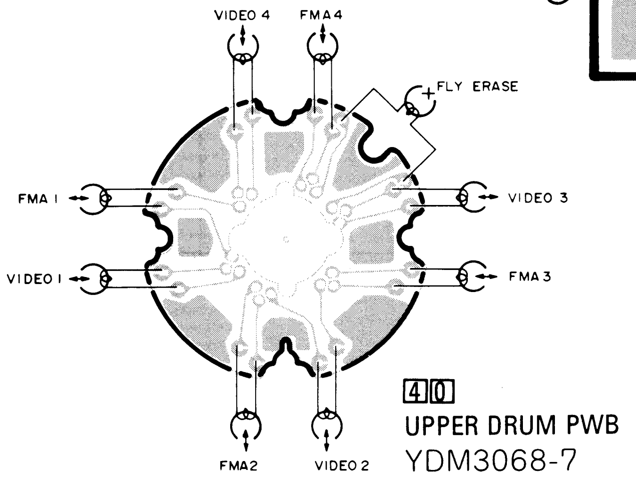
COMPONENT SIDE (A)


1
2
A
B
C
7
1
C5046
C5005
CN5001
C5015
C5014
C5017
C5016
IC5001
D5002
R5026
C5008
R5002
C5004
C5006
C5009
8
14
20
1
10
11
C5025
C5027
C5036
C5037
C5030
R5037
R5015
C5003
R5022
R5014
R5012
C5026
R5024
C5023
C5024
R5031
R5035
R5034
C5021
X5001
C5020
C5019
R5010
C5018
R5009
35
CN302
03 CCD PWB YB10184-01-03

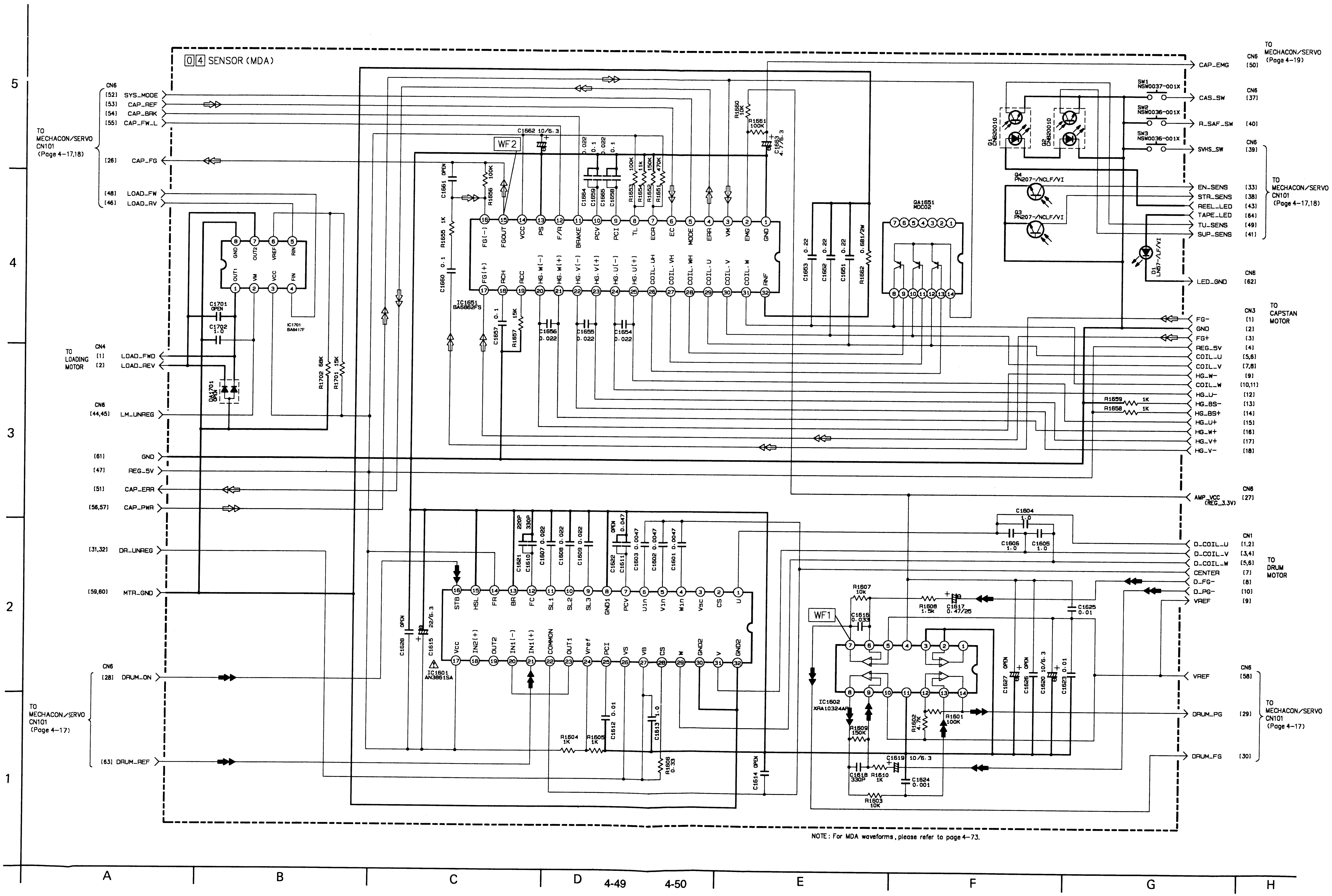
COMPONENT PARTS LOCATION GUIDE (CCD PWB)

REF.No.	LOCATION		
CAPACITOR			
C5001	B	C	1A
C5002	B	C	2B
C5003	A	C	2B
C5004	A	C	1B
C5005	A	C	1A
C5006	A	C	1B
C5007	B	C	1A
C5008	A	C	1B
C5009	A	C	2B
C5010	B	C	1A
C5011	B	C	1A
C5012	B	C	2A
C5013	B	C	1A
C5014	A	C	2A
C5015	A	C	2A
C5016	A	C	2A
C5017	A	C	2A
C5018	A	C	1B
C5019	A	C	1B
C5020	A	C	1B
C5021	A	C	1B
C5022	B	C	1B
C5023	A	C	1B
C5024	A	C	1B
C5025	A	C	1B
C5026	A	C	1B
C5027	A	C	1B
C5028	B	C	2B
C5029	B	C	2B
C5030	A	C	2B
C5031	B	C	2B
C5032	B	C	2A
C5033	B	C	2A
C5034	B	C	2A
C5035	B	C	2A
C5036	A	C	2B
C5037	A	C	2B
C5038	B	C	2A
C5039	B	C	2A
C5040	B	C	2A
C5041	B	C	2B
C5042	B	C	2A
C5043	B	C	2B
C5044	B	C	1A
C5045	B	C	1A
C5046	A	C	1A
C5049	B	C	2B
CONNECTOR			
CN302	A	C	2B
CN5001	A	C	2A
DIODE			
D5001	B	C	1A
D5002	A	C	1A
IC			
IC5001	A	C	1A
IC5002	B	C	1B
IC5003	B	C	2A
COIL			
L5001	B	C	2A
L5002	B	C	2A
L5003	B	C	2B
L5004	B	C	2A
L5005	B	C	1A
L5006	B	C	2B
L5007	B	C	2B
L5008	B	C	2B
L5009	B	C	2B
TRANSISTOR			
Q5001	B	C	2A
Q5002	B	C	2A
Q5003	B	C	1A
RESISTOR			
R5001	B	C	1A
R5002	A	C	1B
R5003	B	C	1A
R5004	B	C	2A
R5005	B	C	2A
R5006	B	C	2B
R5007	B	C	2B
R5008	B	C	2B
R5009	A	C	1B
R5010	A	C	1B
R5011	B	C	1A
R5012	A	C	1B
R5013	B	C	2B
R5014	A	C	2B
R5015	A	C	2B
R5016	B	C	2B
R5017	B	C	1B
R5018	B	C	1B
R5019	B	C	1B
R5020	B	C	2A
R5021	B	C	2B
R5022	A	C	2B
R5023	B	C	1B
R5024	A	C	1B
R5025	B	C	1B
R5026	A	C	1B
R5027	B	C	1A
R5028	B	C	1A
R5029	B	C	1A
R5030	B	C	1A
R5031	A	C	1B
R5032	B	C	1B
R5033	B	C	1B
R5034	A	C	1B
R5035	A	C	1B
R5036	B	C	1B
R5037	A	C	2B
R5038	B	C	1B
R5039	B	C	1B
R5040	B	C	1B
R5041	B	C	2A
OTHER			
X5001	A	C	1B

– UPPER DRUM –


VIDEO 4
FMA 4
FLY ERASE
FMA 1
VIDEO 3
VIDEO 1
FMA 3
FMA 2
VIDEO 2
40
UPPER DRUM PWB
YDM3068-7

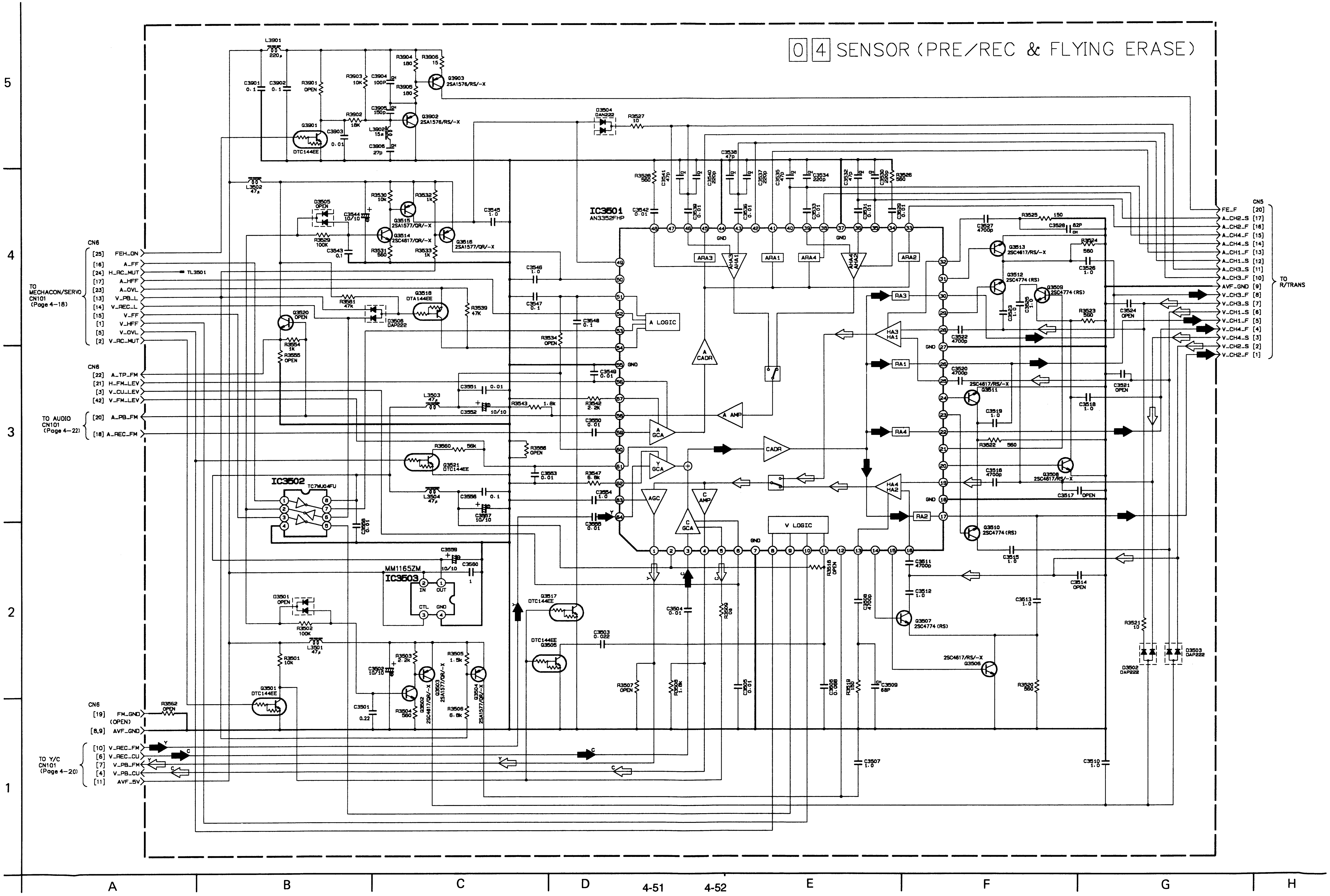
4.18 MDA SCHEMATIC DIAGRAM



04 SENSOR (MDA)
TO MECHACON/SERVO CN101 (Page 4-17,18)
CN6
[52] SYS_MODE
[53] CAP_REF
[54] CAP_BRK
[55] CAP_FW_L
[26] CAP_FG
[48] LOAD_FW
[46] LOAD_RV
TO LOADING MOTOR
CN4
[1] LOAD_FWD
[2] LOAD_REV
CN6
[44,45] LM_UNREG
[61] GND
[47] REG_5V
[51] CAP_ERR
[56,57] CAP_PWR
[31,32] DR_UNREG
[59,60] MTR_GND
CN6
[28] DRUM_ON
[63] DRUM_REF
TO MECHACON/SERVO CN101 (Page 4-17)
IC1701 BA6417F
QA1701
C1701 OPEN
C1702 1.0
R1702 68K
R1701 15K
IC1651 BA6862FS
WF2
C1662 10/6.3
C1661 OPEN
R1656 100K
R1655 1K
C1660 0.1
C1657 0.1
R1657 15K
C1656 0.022
C1655 0.022
C1654 0.022
C1664 0.022
C1659 0.1
C1665 0.022
C1658 0.1
R1653 100K
R1654 11K
R1652 150K
R1651 470K
R1660 10K
R1661 100K
C1663 4.7/6.3
C1653 0.22
C1652 0.22
C1651 0.22
R1662 0.681/2W
QA1651 MDC02
FG(-) FGOUT VCC PS F/R BRAKE PCV PCI TL ECR EC MODE ERR VM EMG GND
FG(+) RCH RCC HG.W(-) HG.W(+) HG.V(-) HG.V(+) HG.U(-) HG.U(+) COIL.UH COIL.VH COIL.WH COIL.U COIL.V COIL.W RNF
Q1 CNB20010
Q2 CNB20010
SW1 NSW0037-001X
SW2 NSW0036-001X
SW3 NSW0036-001X
Q4 PN207-/NCLF/VI
Q3 PN207-/NCLF/VI
D1 LN57-/LF/VI
CAP_EMG CN6 [50]
TO MECHACON/SERVO (Page 4-19)
CAS_SW [37]
R_SAF_SW [40]
SVHS_SW [39]
EN_SENS [33]
STR_SENS [38]
REEL_LED [43]
TAPE_LED [64]
TU_SENS [49]
SUP_SENS [41]
TO MECHACON/SERVO CN101 (Page 4-17,18)
LED_GND CN6 [62]
CN3
TO CAPSTAN MOTOR
FG- [1]
GND [2]
FG+ [3]
REG_5V [4]
COIL_U [5,6]
COIL_V [7,8]
HG_W- [9]
COIL_W [10,11]
HG_U- [12]
HG_BS- [13]
HG_BS+ [14]
HG_U+ [15]
HG_W+ [16]
HG_V+ [17]
HG_V- [18]
R1659 1K
R1658 1K
AMP_VCC (REG_3.3V) CN6 [27]
CN1
TO DRUM MOTOR
D_COIL_U [1,2]
D_COIL_V [3,4]
D_COIL_W [5,6]
CENTER [7]
D_FG- [8]
D_PG- [10]
VREF [9]
C1604 1.0
C1606 1.0
C1605 1.0
IC1601 AN3861SA
STB HSL FR BR FC SL1 SL2 SL3 GND1 PCV Uin Vin Win Vsc CS U
Vcc IN2(+) OUT2 IN1(-) IN1(+) COMMON OUT1 Vref PCI VS VB CS W GND2 V GND2
C1621 220P
C1610 330P
C1607 0.022
C1608 0.022
C1609 0.022
C1622 OPEN
C1611 0.047
C1603 0.0047
C1602 0.0047
C1601 0.0047
C1628 OPEN
C1615 22/6.3
R1604 1K
R1605 1K
C1612 0.01
C1613 1.0
R1606 0.33
C1614 OPEN
IC1602 XRA10324AF
WF1
R1607 10k
C1616 0.033
R1608 1.5k
C1617 0.47/25
C1625 0.01
R1609 150K
R1602 4.7K
R1601 100K
C1619 10/6.3
C1618 330P
R1610 1K
C1624 0.001
R1603 10K
C1627 OPEN
C1626 OPEN
C1620 10/6.3
C1623 0.01
VREF CN6 [58]
DRUM_PG [29]
DRUM_FG [30]
TO MECHACON/SERVO CN101 (Page 4-17)
1 2 3 4 5
A B C D E F G H

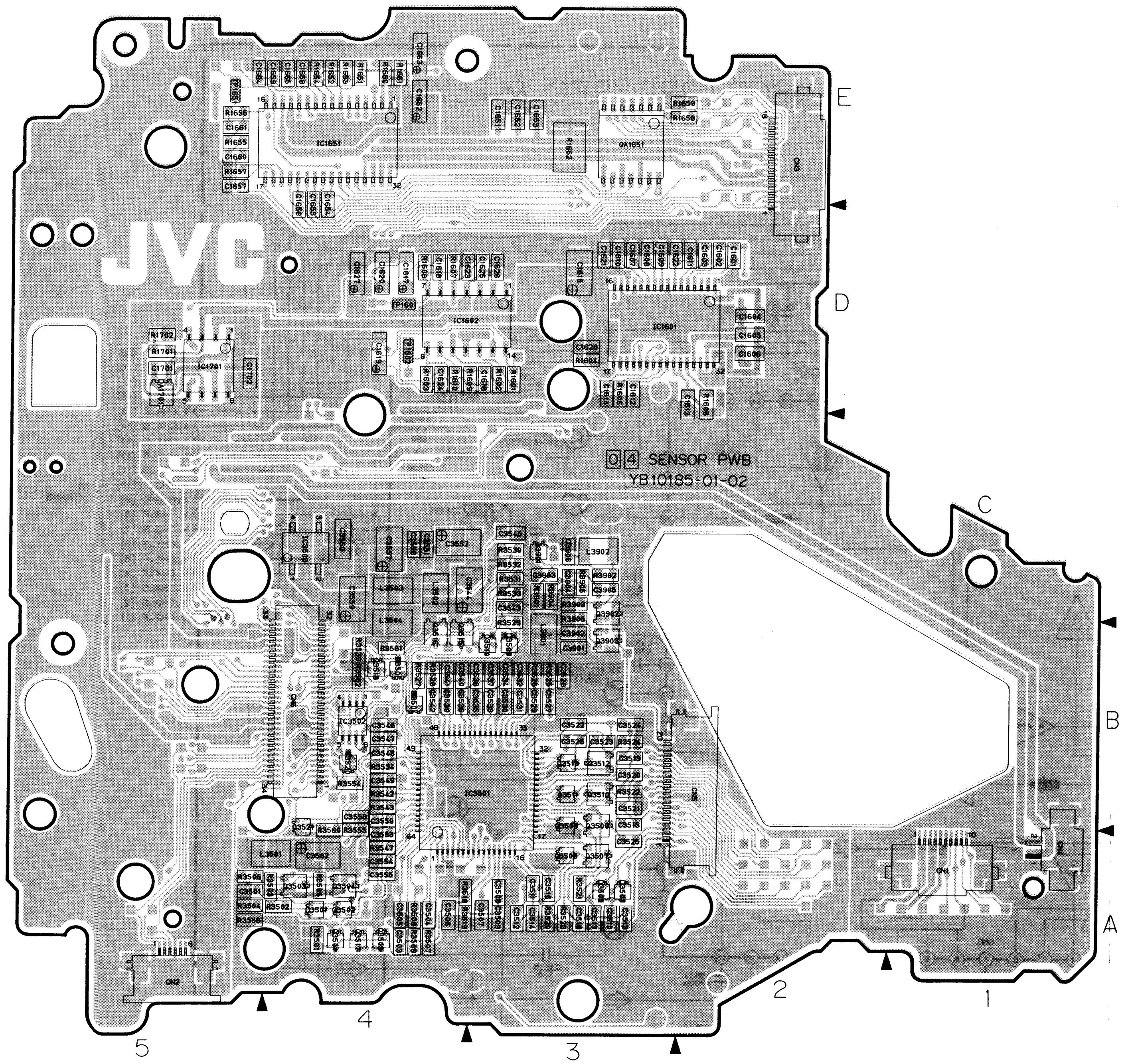
NOTE: For MDA waveforms, please refer to page 4-73.

4.19 PRE/REC AND FLYING ERASE SCHEMATIC DIAGRAMS

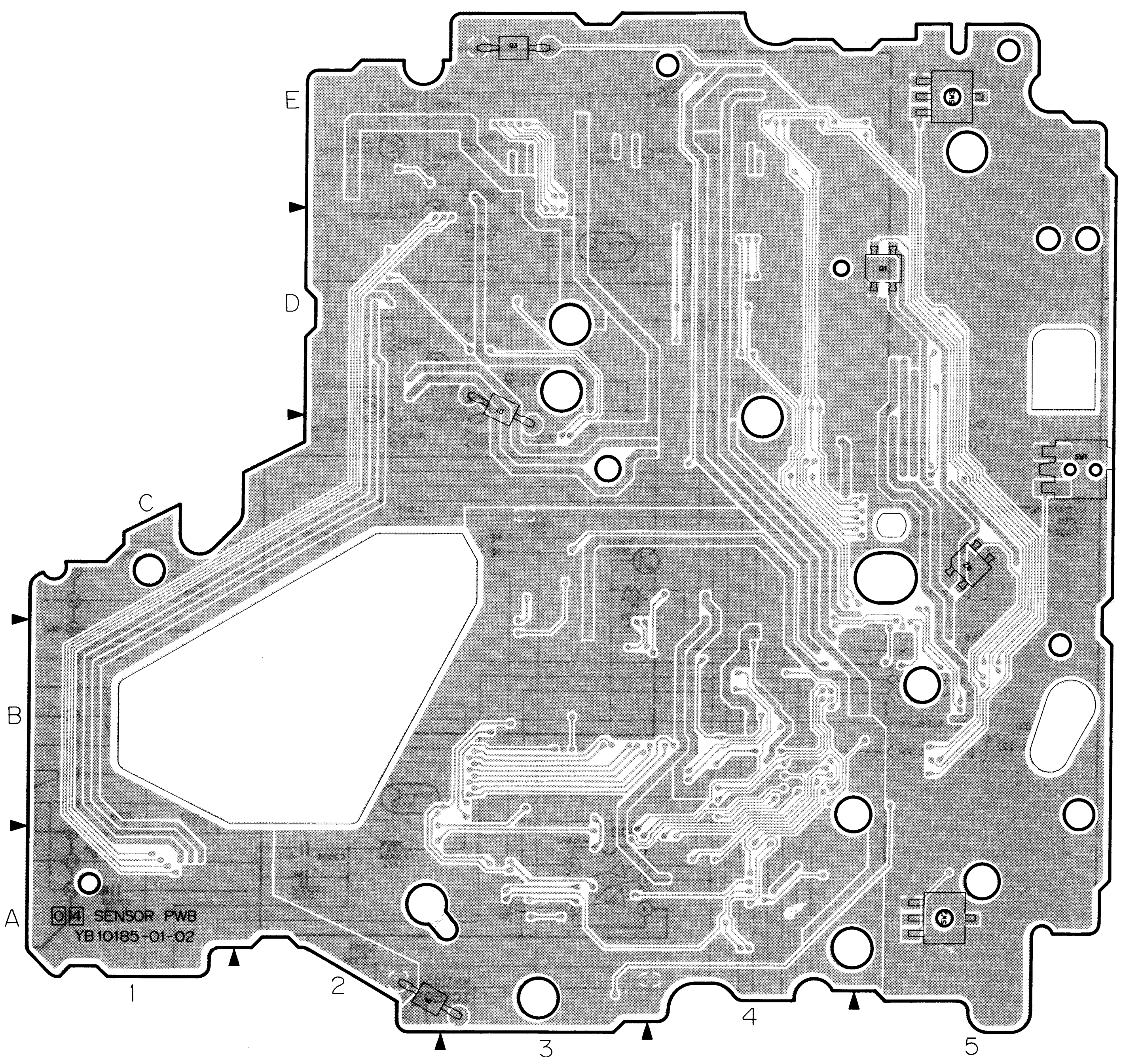

04 SENSOR (PRE/REC & FLYING ERASE)
TO MECHACON/SERVO CN101 (Page 4-18)
CN6
[25] FEH_ON
[16] A_FF
[24] H_RC_MUT
[17] A_HFF
[23] A_OVL
[13] V_PB_L
[14] V_REC_L
[15] V_FF
[1] V_HFF
[5] V_OVL
[2] V_RC_MUT
CN6
[22] A_TP_FM
[21] H_FM_LEV
[3] V_CU_LEV
[42] V_FM_LEV
TO AUDIO CN101 (Page 4-22)
[20] A_PB_FM
[18] A_REC_FM
CN6
[19] FM_GND
(OPEN)
[8,9] AVF_GND
TO Y/C CN101 (Page 4-20)
[10] V_REC_FM
[6] V_REC_CU
[7] V_PB_FM
[4] V_PB_CU
[11] AVF_5V
R3562 OPEN
Y
C
CN5
FE_F [20]
A_CH2_S [17]
A_CH2_F [16]
A_CH4_F [15]
A_CH4_S [14]
A_CH1_F [13]
A_CH1_S [12]
A_CH3_S [11]
A_CH3_F [10]
AVF_GND [9]
V_CH3_F [8]
V_CH3_S [7]
V_CH1_S [6]
V_CH1_F [5]
V_CH4_F [4]
V_CH4_S [3]
V_CH2_S [2]
V_CH2_F [1]
TO R/TRANS
IC3501
AN3352FHP
IC3502
TC7WU04FU
IC3503
MM1165ZM
IN
OUT
CTL
GND
A LOGIC
V LOGIC
ARA3
AHA3 AHA1
ARA1
ARA4
AHA4 AHA2
ARA2
RA3
RA1
RA4
RA2
HA3 HA1
HA4 HA2
A CADR
A AMP
A GCA
Y GCA
CADR
AGC
C AMP
C GCA
GND
L3901 220μ
C3901 0.1
C3902 0.1
R3901 OPEN
Q3901 DTC144EE
C3903 0.01
R3902 18K
R3903 10K
C3904 100P
R3904 180
R3905 180
R3906 15
C3905 150p
L3902 15μ
C3906 27p
Q3902 2SA1576/RS/-X
Q3903 2SA1576/RS/-X
D3504 DAN222
R3527 10
L3502 47μ
D3505 OPEN
C3544 10/10
R3529 100K
C3543 0.1
R3530 10K
R3531 560
R3532 1K
R3533 1K
Q3515 2SA1577/QR/-X
Q3514 2SC4617/QR/-X
Q3516 2SA1577/QR/-X
C3545 1.0
Q3520 OPEN
R3554 1K
R3555 OPEN
R3561 47K
D3506 DAP222
Q3518 DTA144EE
R3539 47K
C3546 1.0
C3547 0.1
C3548 0.1
R3534 OPEN
C3549 0.01
C3551 0.01
L3503 47μ
C3552 10/10
R3543 1.8k
R3542 2.2k
C3550 0.01
R3560 56k
Q3521 DTC144EE
R3558 OPEN
C3553 0.01
R3547 6.8k
C3554 1.0
C3555 0.01
L3504 47μ
C3556 0.1
C3557 10/10
C3558 0.01
C3559 10/10
C3560 1
D3501 OPEN
R3502 100K
L3501 47μ
R3501 10K
Q3501 DTC144EE
C3502 10/10
C3501 0.22
R3503 2.2k
R3504 560
Q3502 2SC4617/QR/-X
Q3503 2SA1577/QR/-X
R3505 1.5k
R3506 6.8k
Q3504 2SA1577/QR/-X
Q3517 DTC144EE
DTC144EE Q3505
C3503 0.022
C3504 0.01
R3507 OPEN
R3508 1.8k
C3505 0.01
C3506 0.068
C3508 4700p
R3519 150
C3509 68P
C3507 1.0
R3518 OPEN
C3511 4700p
C3512 1.0
Q3507 2SC4774 (RS)
2SC4617/RS/-X Q3506
C3513 1.0
R3520 560
C3510 1.0
R3521 10
D3502 DAP222
D3503 DAP222
C3514 OPEN
C3515 1.0
Q3510 2SC4774 (RS)
C3516 4700p
Q3508 2SC4617/RS/-X
C3517 OPEN
R3522 560
C3518 1.0
C3519 1.0
C3520 4700p
2SC4617/RS/-X Q3511
C3521 OPEN
C3522 4700p
C3523 1.0
C3525 1.0
Q3512 2SC4774 (RS)
Q3509 2SC4774 (RS)
R3523 560
C3524 OPEN
Q3513 2SC4617/RS/-X
C3527 4700p
R3525 150
C3528 82P
R3524 560
C3526 1.0
R3528 560
C3541 47p
C3542 0.01
C3539 0.01
C3540 220p
C3538 47p
C3536 0.01
C3537 220p
C3535 47p
C3534 220p
C3533 0.01
C3532 47p
C3531 0.01
C3530 220p
C3529 0.01
R3526 560
TL3501
A
B
C
D
E
F
G
H
1
2
3
4
5

4.20 SENSOR CIRCUIT BOARD

FOIL SIDE (B)



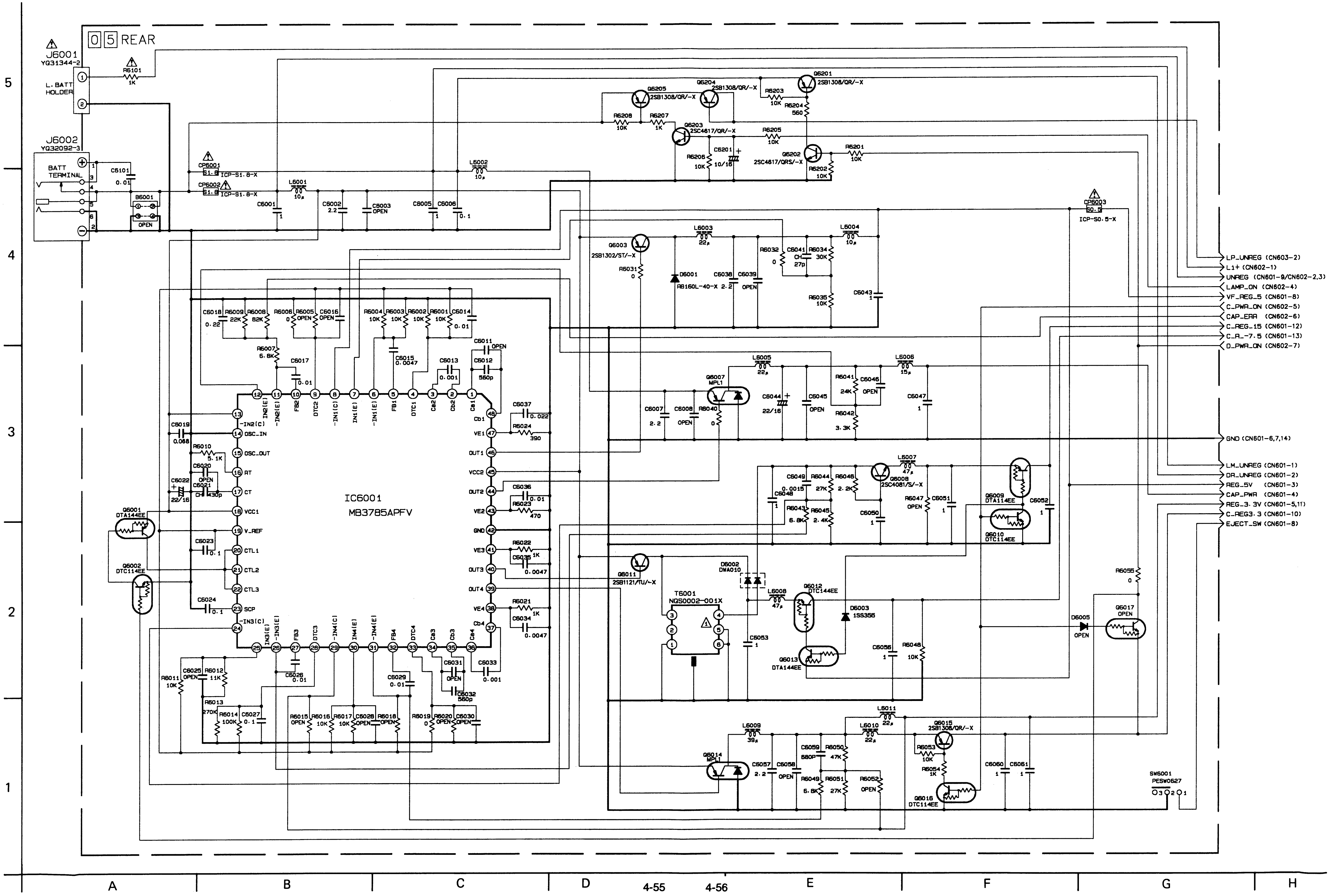
COMPONENT SIDE (A)



COMPONENT PARTS LOCATION GUIDE <SENSOR PWB>

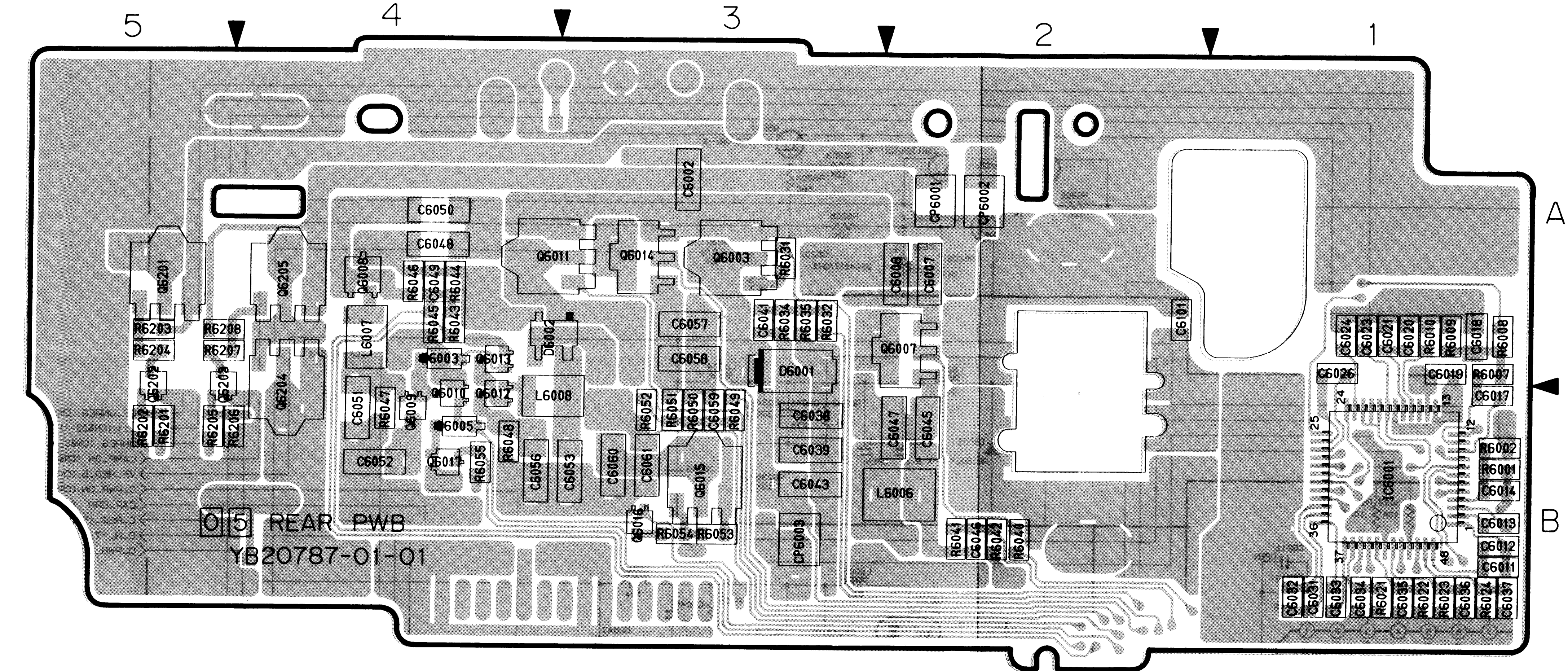
REF.No.	LOCATION		
CAPACITOR			
C1601	B	C	2D
C1602	B	C	2D
C1603	B	C	2D
C1604	B	C	2D
C1605	B	C	2D
C1606	B	C	2D
C1607	B	C	3D
C1608	B	C	3D
C1609	B	C	3D
C1610	B	C	3D
C1611	B	C	2D
C1612	B	C	3D
C1613	B	C	2D
C1614	B	C	3D
C1615	B	C	3D
C1616	B	C	4D
C1617	B	C	4D
C1618	B	C	3D
C1619	B	C	4D
C1620	B	C	4D
C1621	B	C	3D
C1622	B	C	3D
C1623	B	C	4D
C1624	B	C	4D
C1625	B	C	3D
C1626	B	C	3D
C1627	B	C	4D
C1628	B	C	3D
C1651	B	C	3E
C1652	B	C	3E
C1653	B	C	3E
C1654	B	C	4D
C1655	B	C	4D
C1656	B	C	4D
C1657	B	C	5E
C1658	B	C	4E
C1659	B	C	5E
C1660	B	C	5E
C1661	B	C	5E
C1662	B	C	4E
C1663	B	C	4E
C1664	B	C	5E
C1665	B	C	4E
C1701	B	C	5D
C1702	B	C	5D
C3501	B	C	5A
C3502	B	C	4A
C3503	B	C	4A
C3504	B	C	4A
C3505	B	C	4A
C3506	B	C	4A
C3507	B	C	3A
C3508	B	C	3A
C3509	B	C	3A
C3510	B	C	3A
C3511	B	C	3A
C3512	B	C	3A
C3513	B	C	3A
C3514	B	C	3A
C3515	B	C	3B
C3516	B	C	3A
C3517	B	C	3A
C3518	B	C	3A
C3519	B	C	3B
C3520	B	C	3B
C3521	B	C	3B
C3522	B	C	3B
C3523	B	C	3B
C3524	B	C	3B
C3525	B	C	3A
C3526	B	C	3B
C3527	B	C	3B
C3528	B	C	3B
C3529	B	C	3B
C3530	B	C	3B
C3531	B	C	3B
C3532	B	C	3B
C3533	B	C	3B
C3534	B	C	3B
C3535	B	C	3B
C3536	B	C	4B
C3537	B	C	3B
C3538	B	C	3B
C3539	B	C	4B
C3540	B	C	4B
C3541	B	C	4B
C3542	B	C	4B
C3543	B	C	3C
C3544	B	C	4C
C3545	B	C	3C
C3546	B	C	4B
C3547	B	C	4B
C3548	B	C	4B
C3549	B	C	4B
C3550	B	C	4B
C3551	B	C	4C
C3552	B	C	4C
C3553	B	C	4A
C3554	B	C	4A
C3555	B	C	4A
C3556	B	C	4C
C3557	B	C	4C
C3558	B	C	4B
C3559	B	C	4C
C3560	B	C	4C
C3901	B	C	3B
C3902	B	C	3B
C3903	B	C	3C
C3904	B	C	3C
C3905	B	C	3C
C3906	B	C	3C
CONNECTOR			
CN1	B	C	1A
CN2	B	C	5A
CN3	B	C	2D
CN4	B	C	1A
CN5	B	C	3A
CN6	B	C	4B
DIODE			
D1	A	D	3D
D3501	B	C	4A
D3502	B	C	3A
D3503	B	C	3A
D3504	B	C	4B
D3505	B	C	3B
D3506	B	C	4B
DA1701	B	C	5D
IC			
IC1601	B	C	3D
IC1602	B	C	4D
IC1651	B	C	4E
IC1701	B	C	5D
IC3501	B	C	3B
IC3502	B	C	4B
IC3503	B	C	4C
COIL			
L3501	B	C	4A
L3502	B	C	4C
L3503	B	C	4C
L3504	B	C	4B
L3901	B	C	3B
L3902	B	C	3C
TRANSISTOR			
Q1	A	C	5D
Q2	A	C	5C
Q3	A	D	3E
Q4	A	D	2A
Q3501	B	C	4A
Q3502	B	C	4A
Q3503	B	C	4A
Q3504	B	C	4A
Q3505	B	C	4A
Q3506	B	C	3A
Q3507	B	C	3A
Q3508	B	C	3B
Q3509	B	C	3B
Q3510	B	C	3B
Q3511	B	C	3B
Q3512	B	C	3B
Q3513	B	C	3B
Q3514	B	C	3B
Q3515	B	C	4B
Q3516	B	C	4B
Q3517	B	C	4A
Q3518	B	C	4B
Q3520	B	C	4B
Q3521	B	C	4A
Q3901	B	C	3C
Q3902	B	C	3C
Q3903	B	C	3B
QA1651	B	C	3E
RESISTOR			
R1601	B	C	3D
R1602	B	C	3D
R1603	B	C	4D
R1604	B	C	3D
R1605	B	C	3D
R1606	B	C	2D
R1607	B	C	4D
R1608	B	C	4D
R1609	B	C	4D
R1610	B	C	4D
R1651	B	C	4E
R1652	B	C	4E
R1653	B	C	4E
R1654	B	C	4E
R1655	B	C	5E
R1656	B	C	5E
R1657	B	C	5E
R1658	B	C	3E
R1659	B	C	3E
R1660	B	C	4E
R1661	B	C	4E
R1662	B	C	3E
R1701	B	C	5D
R1702	B	C	5D
R3501	B	C	4A
R3502	B	C	4A
R3503	B	C	4A
R3504	B	C	5A
R3505	B	C	4A
R3506	B	C	5A
R3507	B	C	4A
R3508	B	C	4A
R3509	B	C	4A
R3518	B	C	4A
R3519	B	C	4A
R3520	B	C	3A
R3521	B	C	3A
R3522	B	C	3B
R3523	B	C	3A
R3524	B	C	3B
R3525	B	C	3B
R3526	B	C	3B
R3527	B	C	4B
R3528	B	C	4B
R3529	B	C	3B
R3530	B	C	3C
R3531	B	C	3C
R3532	B	C	3C
R3533	B	C	3C
R3534	B	C	4B
R3539	B	C	4B
R3542	B	C	4B
R3543	B	C	4B
R3547	B	C	4A
R3554	B	C	4B
R3555	B	C	4A
R3556	B	C	5A
R3560	B	C	4A
R3561	B	C	4B
R3562	B	C	4B
R3901	B	C	3C
R3902	B	C	3C
R3903	B	C	3C
R3904	B	C	3C
R3905	B	C	3C
R3906	B	C	3C
SWITCH			
SW1	A	C	5C
SW2	A	C	5A
SW3	A	C	5E

4.21 REAR SCHEMATIC DIAGRAM

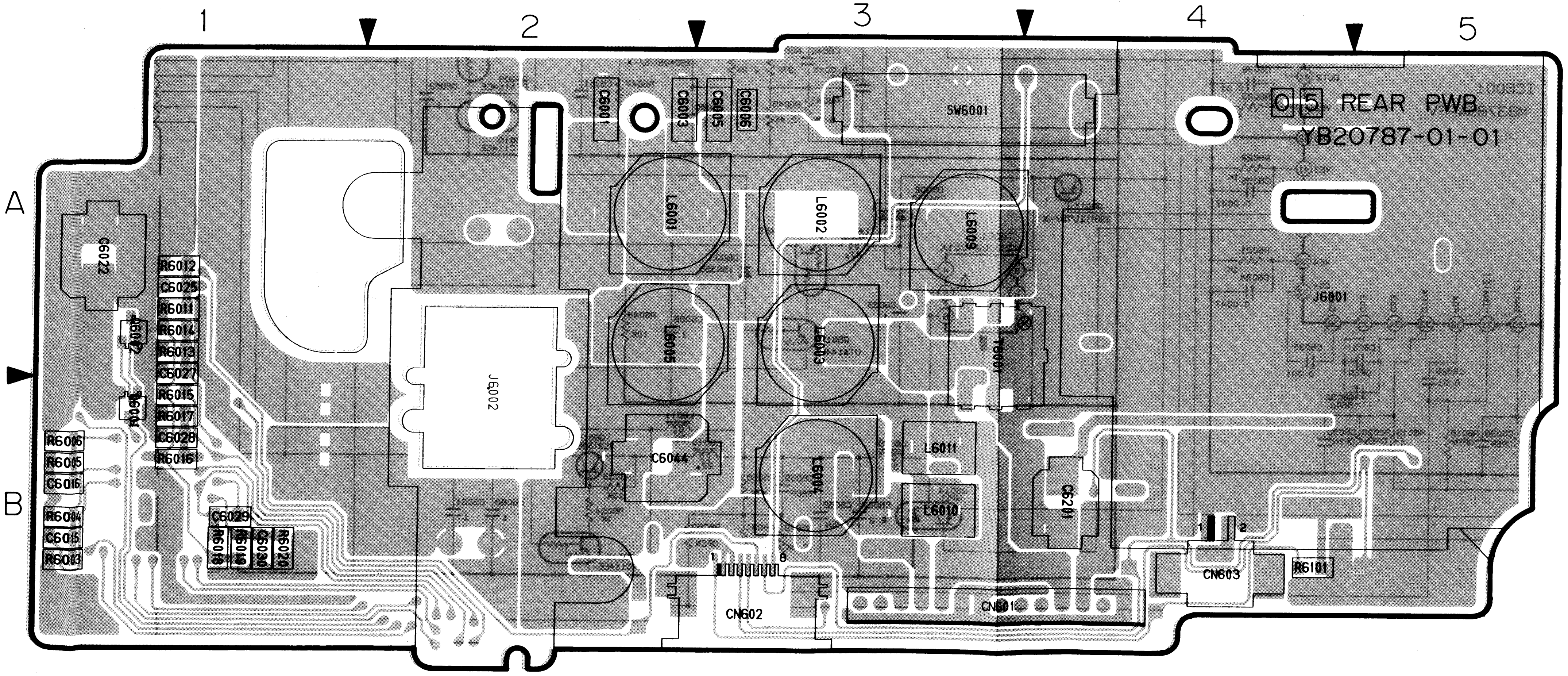

05 REAR
J6001
YQ31344-2
L.BATT HOLDER
R6101 1K
J6002
YQ32092-3
BATT TERMINAL
C6101 0.01
R6001 OPEN
CP6001 S1.6 ICP-S1.6-X
CP6002 S1.6 ICP-S1.6-X
L6001 10μ
L6002 10μ
Q6205 2SB1308/QR/-X
Q6204 2SB1308/QR/-X
Q6201 2SB1308/QR/-X
Q6203 2SC4617/QR/-X
Q6202 2SC4617/QRS/-X
Q6003 2SB1302/ST/-X
D6001 RB160L-40-X
CP6003 S0.5 ICP-S0.5-X
Q6007 MPL1
Q6008 2SC4081/S/-X
Q6009 DTA114EE
Q6010 DTC114EE
Q6001 DTA144EE
Q6002 DTC114EE
IC6001
MB3785APFV
Q6011 2SB1121/TU/-X
D6002 DWA010
T6001 NQS0002-001X
Q6012 DTC144EE
Q6013 DTA144EE
D6003 1SS355
D6005 OPEN
Q6017 OPEN
Q6014 MPL1
Q6015 2SB1308/QR/-X
Q6016 DTC114EE
SW6001 PESW0627
LP_UNREG (CN603-2)
Li+ (CN602-1)
UNREG (CN601-9/CN602-2,3)
LAMP_ON (CN602-4)
VF_REG_5 (CN601-8)
C_PWR_ON (CN602-5)
CAP_ERR (CN602-6)
C_REG_15 (CN601-12)
C_R_-7.5 (CN601-13)
D_PWR_ON (CN602-7)
GND (CN601-6,7,14)
LM_UNREG (CN601-1)
DR_UNREG (CN601-2)
REG_5V (CN601-3)
CAP_PWR (CN601-4)
REG_3.3V (CN601-5,11)
C_REG3.3 (CN601-10)
EJECT_SW (CN601-8)
5
4
3
2
1
A
B
C
D
E
F
G
H

4.22 REAR CIRCUIT BOARD

FOIL SIDE (B)


5
4
3
2
1
A
B
05 REAR PWB
YB20787-01-01
IC6001
D6001
L6006
L6008
L6007
Q6003
Q6007
Q6011
Q6014
Q6015
Q6201
Q6204
Q6205
C6002
C6050
C6048
C6057
C6058
CP6001
CP6002
CP6003

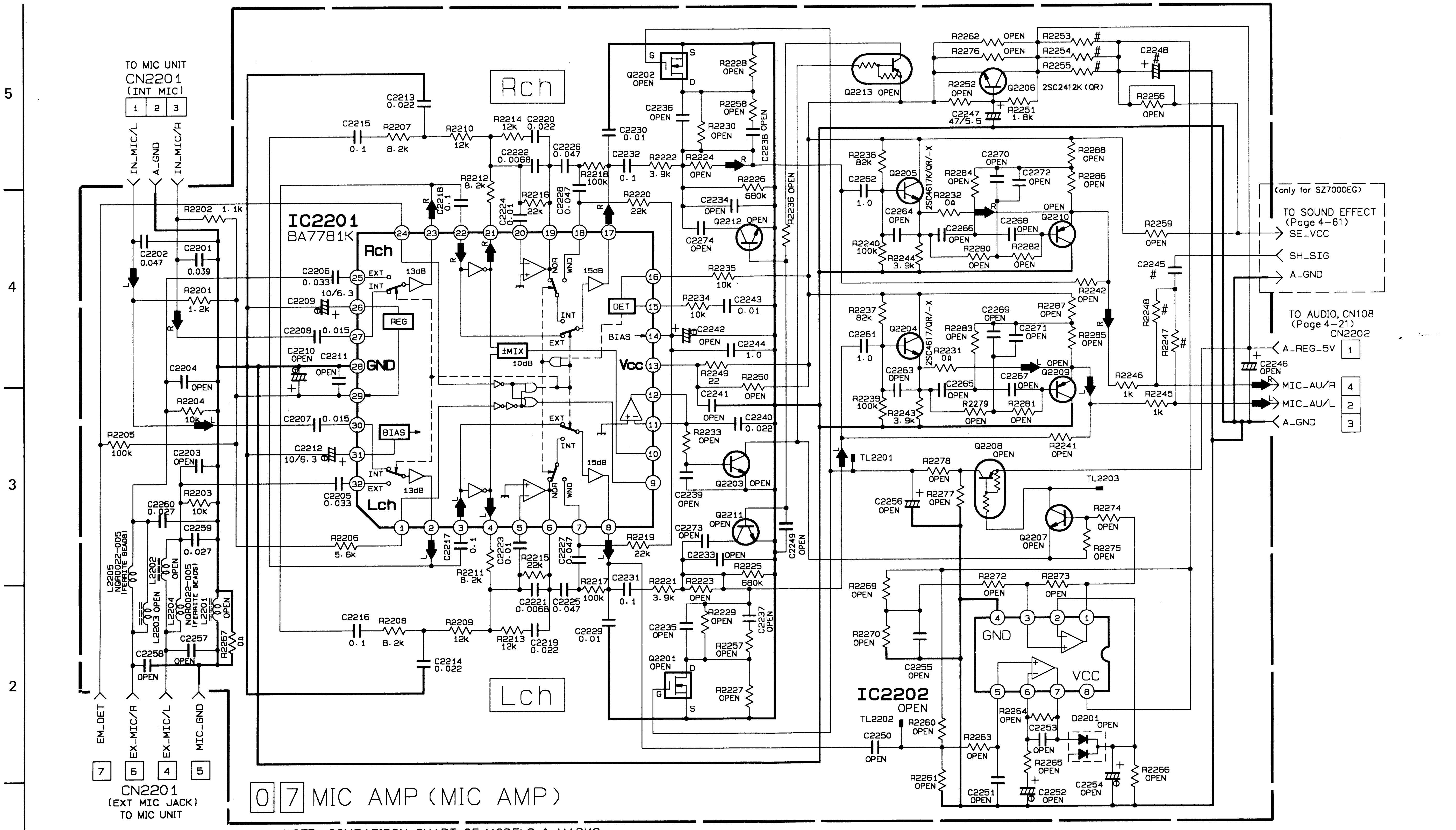
COMPONENT SIDE (A)


1
2
3
4
5
A
B
05 REAR PWB
YB20787-01-01
SW6001
J6001
J6002
L6001
L6002
L6003
L6004
L6005
L6009
L6010
L6011
C6044
C6201
C6022
CN601
CN602
CN603
R6101

COMPONENT PARTS LOCATION GUIDE <REAR PWB>

REF.No.	LOCATION		
CAPACITOR			
C6001	A	C	2A
C6002	B	C	3A
C6003	A	C	2A
C6005	A	C	3A
C6006	A	C	3A
C6007	B	C	2A
C6008	B	C	2A
C6011	B	C	1B
C6012	B	C	1B
C6013	B	C	1B
C6014	B	C	1B
C6015	A	C	1B
C6016	A	C	1B
C6017	B	C	1B
C6018	B	C	1A
C6019	B	C	1A
C6020	B	C	1A
C6021	B	C	1A
C6022	A	C	1A
C6023	B	C	1A
C6024	B	C	1A
C6025	A	C	1A
C6026	B	C	1A
C6027	A	C	1A
C6028	A	C	1B
C6029	A	C	1B
C6030	A	C	1B
C6031	B	C	1B
C6032	B	C	1B
C6033	B	C	1B
C6034	B	C	1B
C6035	B	C	1B
C6036	B	C	1B
C6037	B	C	1B
C6038	B	C	3B
C6039	B	C	3B
C6041	B	C	3A
C6043	B	C	3B
C6044	A	C	2B
C6045	B	C	2B
C6046	B	C	2B
C6047	B	C	2B
C6048	B	C	4A
C6049	B	C	4A
C6050	B	C	4A
C6051	B	C	4B
C6052	B	C	4B
C6053	B	C	3B
C6056	B	C	4B
C6057	B	C	3A
C6058	B	C	3A
C6059	B	C	3B
C6060	B	C	3B
C6061	B	C	3B
C6101	B	C	2A
C6201	A	C	4B
CONNECTOR			
CN601	A	D	3B
CN602	A	C	3B
CN603	A	C	4B
CIRCUIT PROTECTOR			
CP6001	B	C	2A
CP6002	B	C	2A
CP6003	B	C	3B
DIODE			
D6001	B	C	3A
D6002	B	C	4A
D6003	B	C	4A
D6005	B	C	4B
IC			
IC6001	B	C	1B
COIL			
L6001	A	C	2A
L6002	A	C	3A
L6003	A	C	3A
L6004	A	C	3B
L6005	A	C	2A
L6006	B	C	2B
L6007	B	C	4A
L6008	B	C	4B
L6009	A	C	3A
L6010	A	C	3B
L6011	A	C	3B
TRANSISTOR			
Q6001	A	C	1B
Q6002	A	C	1A
Q6003	B	C	3A
Q6007	B	C	2A
Q6008	B	C	4A
Q6009	B	C	4B
Q6010	B	C	4B
Q6011	B	C	4A
Q6012	B	C	4B
Q6013	B	C	4A
Q6014	B	C	3A
Q6015	B	C	3B
Q6016	B	C	3B
Q6017	B	C	4B
Q6201	B	C	5A
Q6202	B	C	5B
Q6203	B	C	5B
Q6204	B	C	4B
Q6205	B	C	4A
RESISTOR			
R6001	B	C	1B
R6002	B	C	1B
R6003	A	C	1B
R6004	A	C	1B
R6005	A	C	1B
R6006	A	C	1B
R6007	B	C	1A
R6008	B	C	1A
R6009	B	C	1A
R6010	B	C	1A
R6011	A	C	1A
R6012	A	C	1A
R6013	A	C	1A
R6014	A	C	1A
R6015	A	C	1B
R6016	A	C	1B
R6017	A	C	1B
R6018	A	C	1B
R6019	A	C	1B
R6020	A	C	1B
R6021	B	C	1B
R6022	B	C	1B
R6023	B	C	1B
R6024	B	C	1B
R6031	B	C	3A
R6032	B	C	3A
R6034	B	C	3A
R6035	B	C	3A
R6040	B	C	2B
R6041	B	C	2B
R6042	B	C	2B
R6043	B	C	4A
R6044	B	C	4A
R6045	B	C	4A
R6046	B	C	4A
R6047	B	C	4B
R6048	B	C	4B
R6049	B	C	3B
R6050	B	C	3B
R6051	B	C	3B
R6052	B	C	3B
R6053	B	C	3B
R6054	B	C	3B
R6055	B	C	4B
R6101	A	C	4B
R6201	B	C	5B
R6202	B	C	5B
R6203	B	C	5A
R6204	B	C	5A
R6205	B	C	5B
R6206	B	C	5B
R6207	B	C	5A
R6208	B	C	5A
OTHER			
J6001	A	D	4A
J6002	A	D	2B
SW6001	A	D	4A
T6001	A	C	3A

4.23 MIC AMP SCHEMATIC DIAGRAM

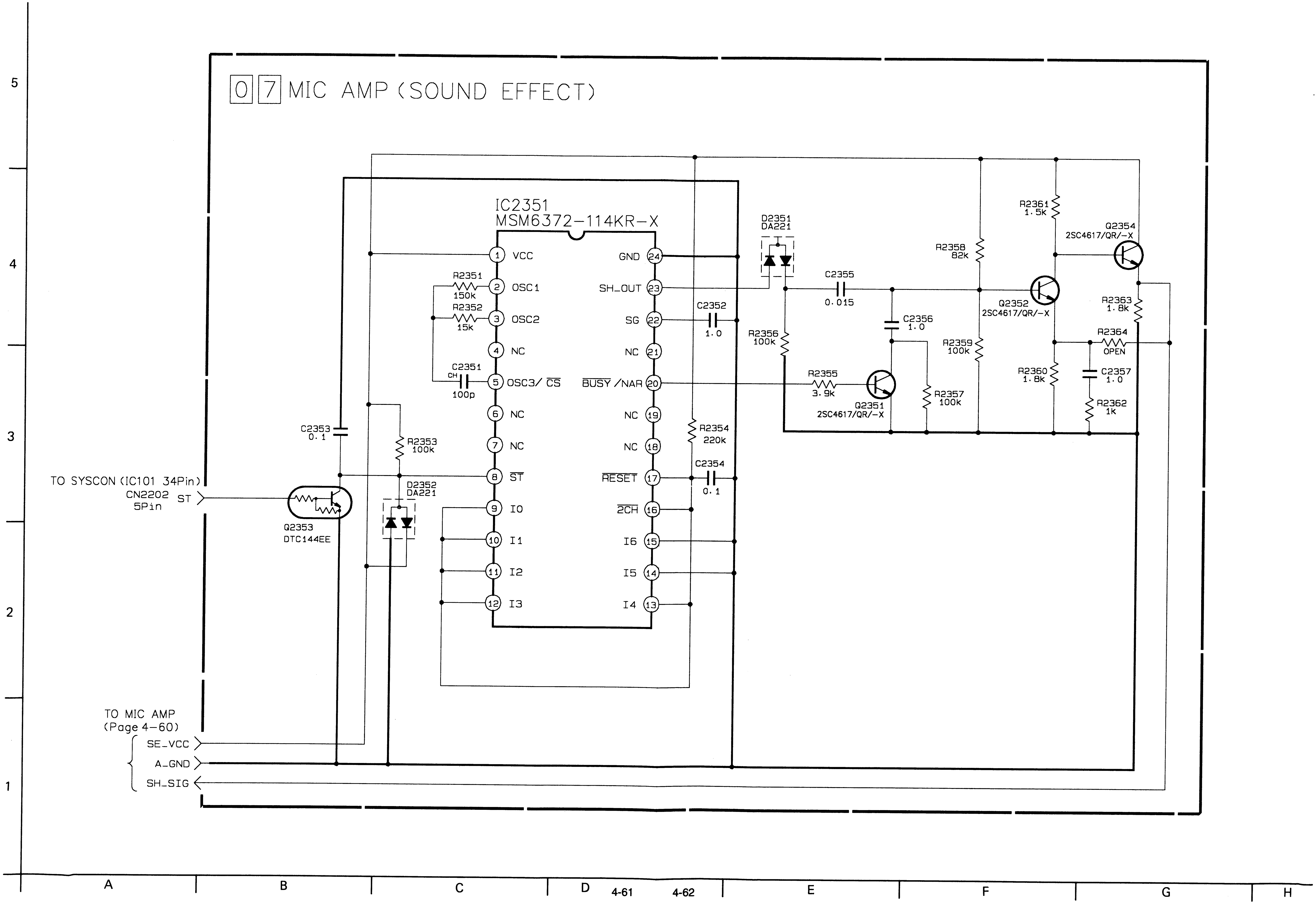


TO MIC UNIT
CN2201
(INT MIC)
IN_MIC/L
A_GND
IN_MIC/R
IC2201
BA7781K
Rch
Lch
GND
Vcc
DET
REG
BIAS
MIX
EXT
INT
13dB
15dB
10dB
NOR
WND
Q2201
Q2202
Q2203
Q2204
Q2205
Q2206 2SC2412K(QR)
Q2207
Q2208
Q2209
Q2210
Q2211
Q2212
Q2213 OPEN
2SC4617K/QR/-X
IC2202
OPEN
TL2201
TL2202
TL2203
D2201 OPEN
VCC
(only for SZ7000EG)
TO SOUND EFFECT
(Page 4-61)
SE_VCC
SH_SIG
A_GND
TO AUDIO, CN108
(Page 4-21)
CN2202
A_REG_5V
MIC_AU/R
MIC_AU/L
A_GND
EM_DET
EX_MIC/R
EX_MIC/L
MIC_GND
CN2201
(EXT MIC JACK)
TO MIC UNIT
L2205 NQR0022-005 (FERRITE BEADS)
L2201 NQR0022-005 (FERRITE BEADS)
07 MIC AMP (MIC AMP)
A
B
C
D
E
F
G
H
1
2
3
4
5

NOTE: COMPARISON CHART OF MODELS & MARKS.

REF.NO	MODELS	
	GR-SZ5000EG	GR-SZ7000EG
R2247	OPEN	47K
R2248	OPEN	47K
R2253	OPEN	82
R2254	OPEN	82
R2255	OPEN	82
C2245	OPEN	0.1
C2248	OPEN	47/5.5

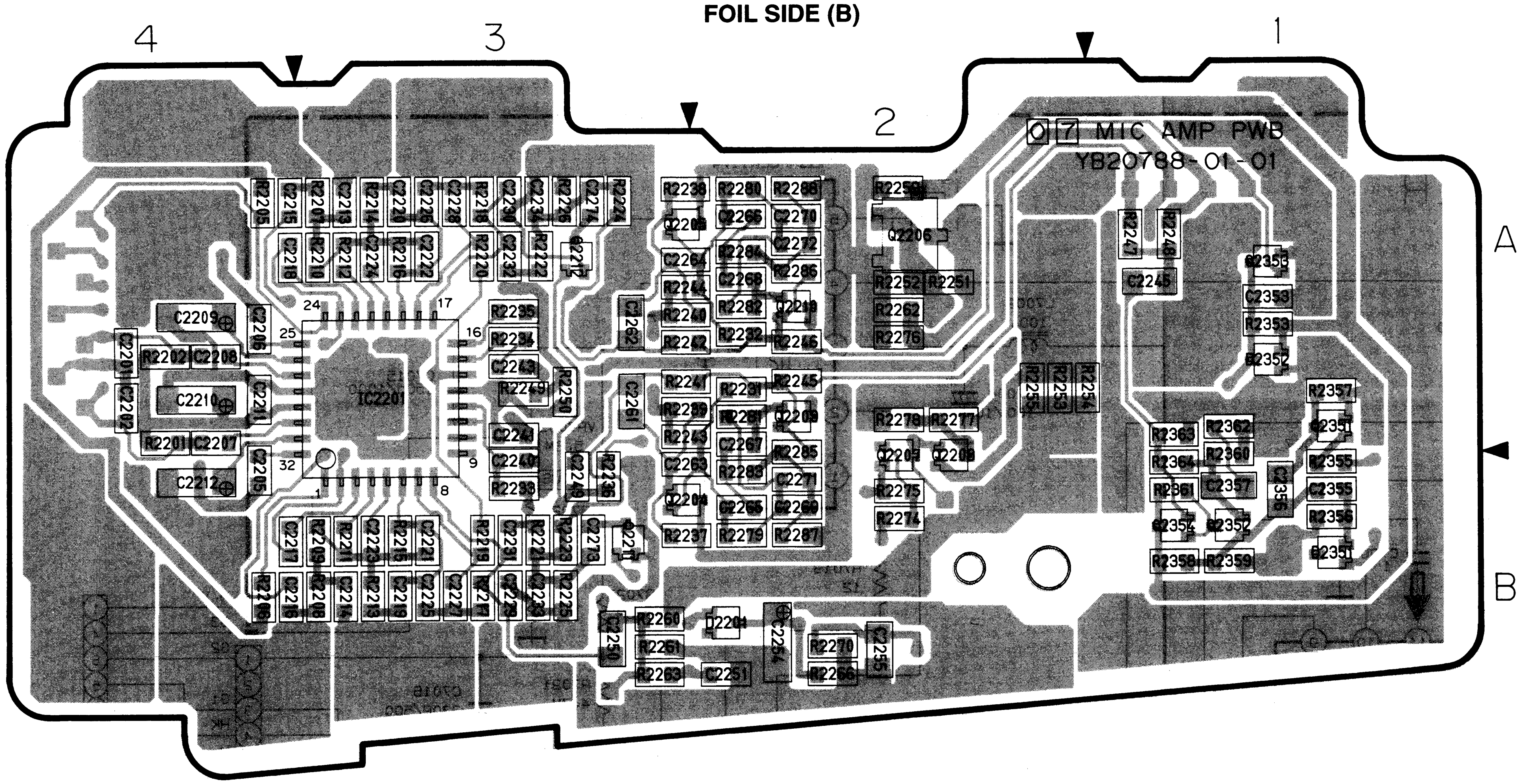
4.24 SOUND EFFECT SCHEMATIC DIAGRAM



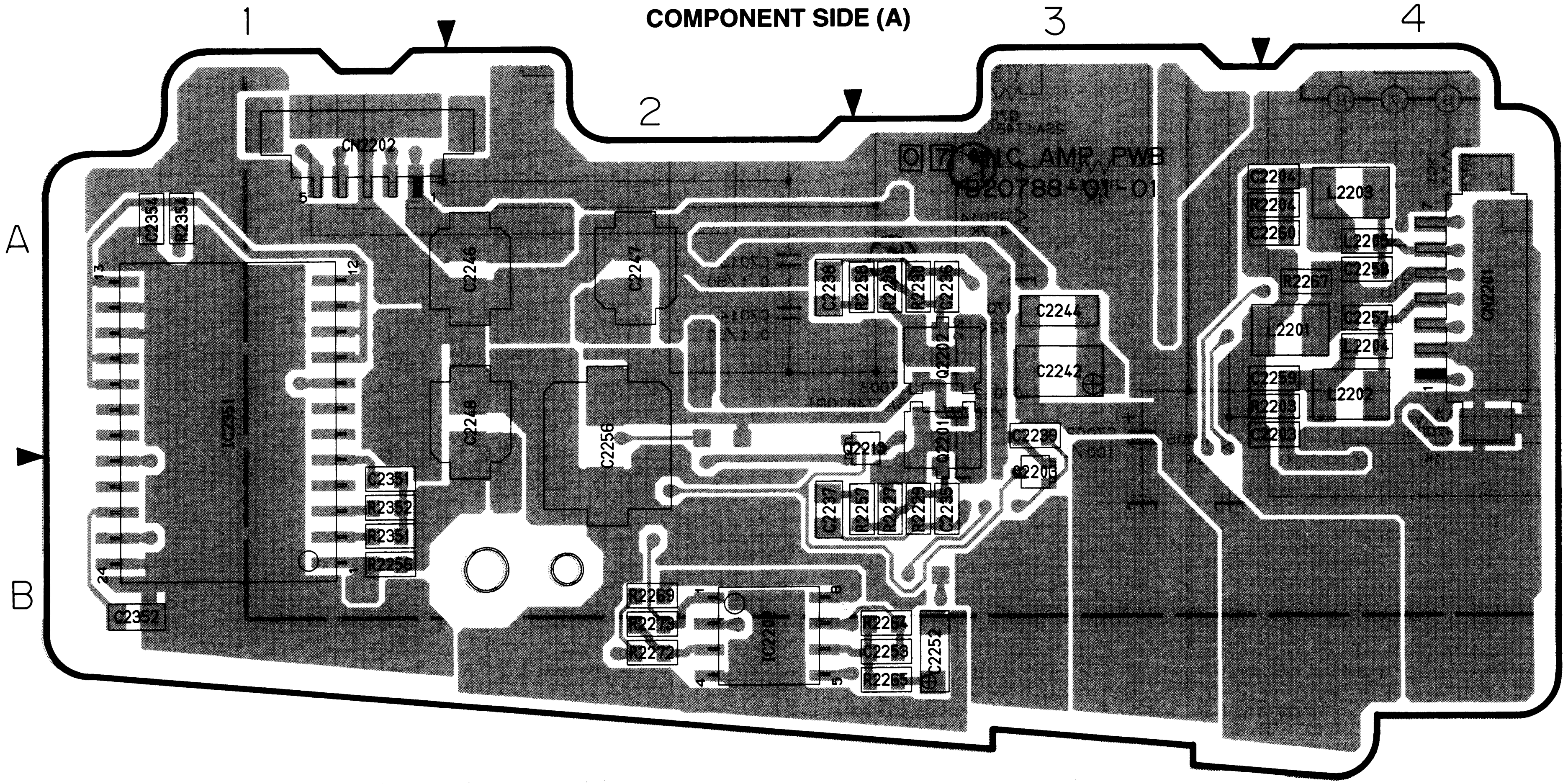
07 MIC AMP (SOUND EFFECT)
IC2351
MSM6372-114KR-X
1 VCC
2 OSC1
3 OSC2
4 NC
5 OSC3/ CS
6 NC
7 NC
8 ST
9 I0
10 I1
11 I2
12 I3
24 GND
23 SH_OUT
22 SG
21 NC
20 BUSY /NAR
19 NC
18 NC
17 RESET
16 2CH
15 I6
14 I5
13 I4
R2351 150k
R2352 15k
C2351 CH 100p
C2352 1.0
C2353 0.1
C2354 0.1
C2355 0.015
C2356 1.0
C2357 1.0
R2353 100k
R2354 220k
R2355 3.9k
R2356 100k
R2357 100k
R2358 82k
R2359 100k
R2360 1.8k
R2361 1.5k
R2362 1k
R2363 1.8k
R2364 OPEN
D2351 DA221
D2352 DA221
Q2351 2SC4617/QR/-X
Q2352 2SC4617/QR/-X
Q2353 DTC144EE
Q2354 2SC4617/QR/-X
TO SYSCON (IC101 34Pin)
CN2202 5Pin
ST
TO MIC AMP (Page 4-60)
SE_VCC
A_GND
SH_SIG
1
2
3
4
5
A
B
C
D
E
F
G
H

4.25 MIC AMP CIRCUIT BOARD

FOIL SIDE (B)



COMPONENT SIDE (A)

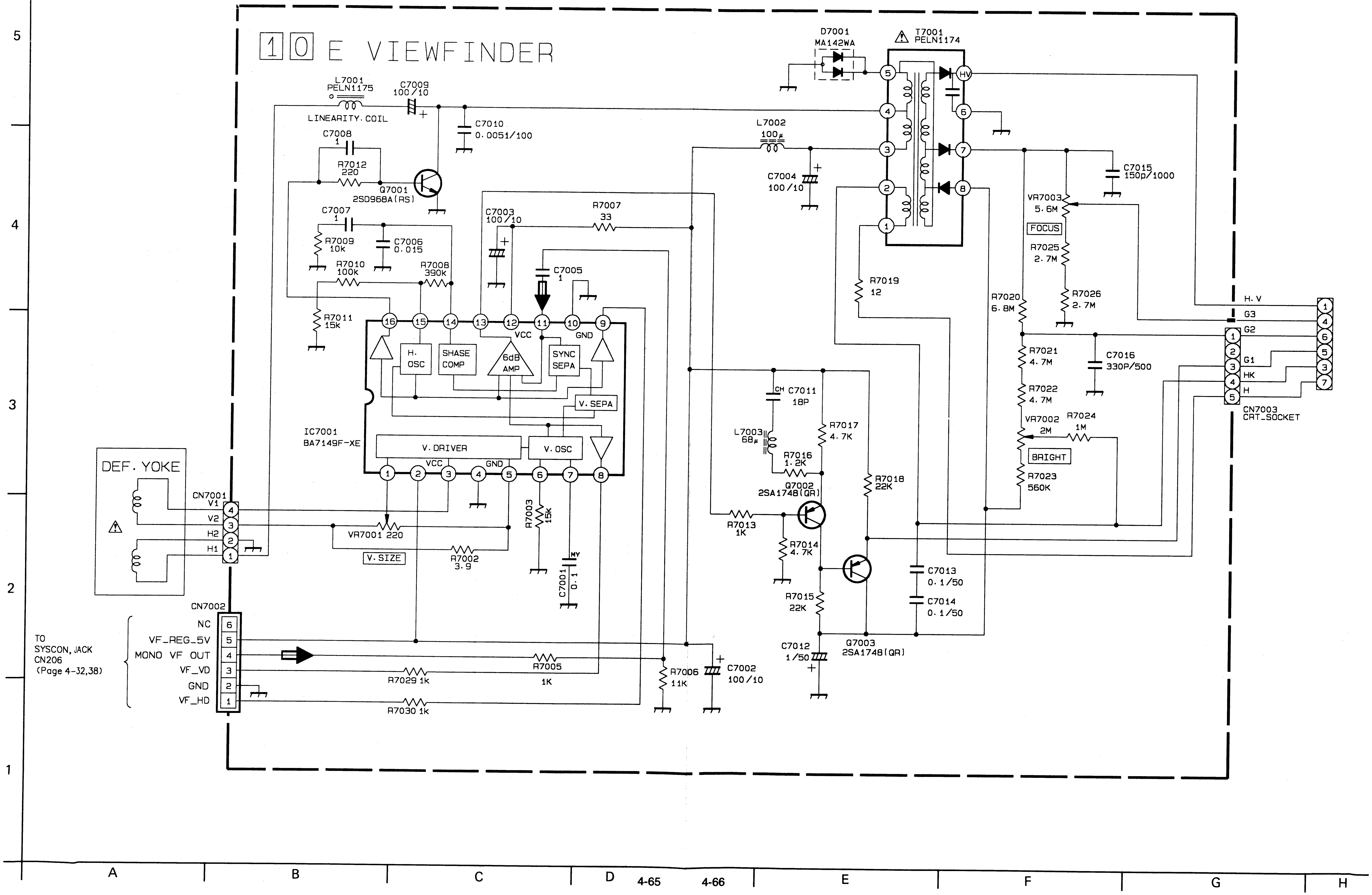


COMPONENT PARTS LOCATION GUIDE <MIC AMP PWB>

REF.No.	LOCATION		
CAPACITOR			
C2201	B	C	4A
C2202	B	C	4A
C2203	A	C	4A
C2204	A	C	4A
C2205	B	C	4B
C2206	B	C	4A
C2207	B	C	4A
C2208	B	C	4A
C2209	B	C	4A
C2210	B	C	4A
C2211	B	C	4A
C2212	B	C	4B
C2213	B	C	3A
C2214	B	C	3B
C2215	B	C	4A
C2216	B	C	4B
C2217	B	C	4B
C2218	B	C	4A
C2219	B	C	3B
C2220	B	C	3A
C2221	B	C	3B
C2222	B	C	3A
C2223	B	C	3B
C2224	B	C	3A
C2225	B	C	3B
C2226	B	C	3A
C2227	B	C	3B
C2228	B	C	3A
C2229	B	C	3B
C2230	B	C	3A
C2231	B	C	3B
C2232	B	C	3A
C2233	B	C	3B
C2234	B	C	3A
C2235	A	C	3B
C2236	A	C	3A
C2237	A	C	2B
C2238	A	C	2A
C2239	A	C	3A
C2240	B	C	3B
C2241	B	C	3A
C2242	A	C	3A
C2243	B	C	3A
C2244	A	C	3A
C2245	B	C	1A
C2246	A	C	2A
C2247	A	C	2A
C2248	A	C	2A
C2249	B	C	3B
C2250	B	C	3B
C2250	B	C	2B
C2251	B	C	2B
C2251	B	C	2B
C2252	A	C	3B
C2252	A	C	2B
C2253	A	C	3B
C2253	A	C	2B
C2254	B	C	2B
C2254	B	C	2B
C2255	B	C	2B
C2255	B	C	3B
C2256	A	C	2A
C2257	A	C	4A
C2258	A	C	4A
C2259	A	C	4A
C2260	A	C	4A
C2261	B	C	3A
C2262	B	C	3A
C2263	B	C	3B
C2264	B	C	3A
C2265	B	C	2B
C2266	B	C	2A
C2267	B	C	2A
C2268	B	C	2A
C2269	B	C	2B
C2270	B	C	2A
C2271	B	C	2B
C2272	B	C	2A
C2273	B	C	3B
C2274	B	C	3A
C2351	A	C	1B
C2352	A	C	1B
C2353	B	C	1A
C2354	A	C	1A
C2355	B	C	1B
C2356	B	C	1B
C2357	B	C	1B
CONNECTOR			
CN2201	A	C	4A
CN2202	A	C	1A
DIODE			
D2201	B	C	2B
D2201	B	C	2B
D2351	B	C	1B
D2352	B	C	1A
IC			
IC2201	B	C	3A
IC2202	A	C	2B
IC2202	A	C	2B
IC2351	A	C	1A
COIL			
L2201	A	C	4A
L2202	A	C	4A
L2203	A	C	4A
L2204	A	C	4A
L2205	A	C	4A
TRANSISTOR			
Q2201	A	C	3A
Q2202	A	C	3A
Q2203	A	C	3B
Q2204	B	C	3B
Q2205	B	C	3A
Q2206	B	C	2A
Q2207	B	C	2A
Q2208	B	C	2A
Q2209	B	C	2A
Q2210	B	C	2A
Q2211	B	C	3B
Q2212	B	C	3A
Q2213	A	C	3A
Q2351	B	C	1A
Q2352	B	C	1B
Q2353	B	C	1A
Q2354	B	C	1B
RESISTOR			
R2201	B	C	4A
R2202	B	C	4A
R2203	A	C	4A
R2204	A	C	4A
R2205	B	C	4A
R2206	B	C	4B
R2207	B	C	3A
R2208	B	C	3B
R2209	B	C	3B
R2210	B	C	3A
R2211	B	C	3B
R2212	B	C	3A
R2213	B	C	3B
R2214	B	C	3A
R2215	B	C	3B
R2216	B	C	3A
R2217	B	C	3B
R2218	B	C	3A
R2219	B	C	3B
R2220	B	C	3A
R2221	B	C	3B
R2222	B	C	3A
R2223	B	C	3B
R2224	B	C	3A
R2225	B	C	3B
R2226	B	C	3A
R2227	A	C	3B
R2228	A	C	3A
R2229	A	C	3B
R2230	A	C	3A
R2231	B	C	2A
R2232	B	C	2A
R2233	B	C	3B
R2234	B	C	3A
R2235	B	C	3A
R2236	B	C	3B
R2237	B	C	3B
R2238	B	C	3A
R2239	B	C	3A
R2240	B	C	3A
R2241	B	C	3A
R2242	B	C	3A
R2243	B	C	3A
R2244	B	C	3A
R2245	B	C	2A
R2246	B	C	2A
R2247	B	C	1A
R2248	B	C	1A
R2249	B	C	3A
R2250	B	C	3A
R2251	B	C	2A
R2252	B	C	2A
R2253	B	C	2A
R2254	B	C	2A
R2255	B	C	2A
R2256	A	C	1B
R2257	A	C	3B
R2258	A	C	3A
R2259	B	C	2A
R2260	B	C	3B
R2261	B	C	3B
R2261	B	C	2B
R2262	B	C	2A
R2263	B	C	3B
R2263	B	C	2B
R2264	A	C	3B
R2264	A	C	2B
R2265	A	C	3B
R2265	A	C	2B
R2266	B	C	2B
R2266	B	C	3B
R2267	A	C	4A
R2269	A	C	2B
R2270	B	C	2B
R2270	B	C	3B
R2272	A	C	2B
R2272	A	C	3B
R2273	A	C	2B
R2273	A	C	3B
R2274	B	C	2B
R2275	B	C	2B
R2276	B	C	2A
R2277	B	C	2A
R2278	B	C	2A
R2279	B	C	2B
R2280	B	C	2A
R2281	B	C	2A
R2282	B	C	2A
R2283	B	C	2B
R2284	B	C	2A
R2285	B	C	2A
R2286	B	C	2A
R2287	B	C	2B
R2288	B	C	2A
R2351	A	C	1B
R2352	A	C	1B
R2353	B	C	1A
R2354	A	C	1A
R2355	B	C	1B
R2356	B	C	1B
R2357	B	C	1A
R2358	B	C	1B
R2359	B	C	1B
R2360	B	C	1A
R2361	B	C	1B
R2362	B	C	1A
R2363	B	C	1A
R2364	B	C	1B

4.26 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM (For SZ5000EG)

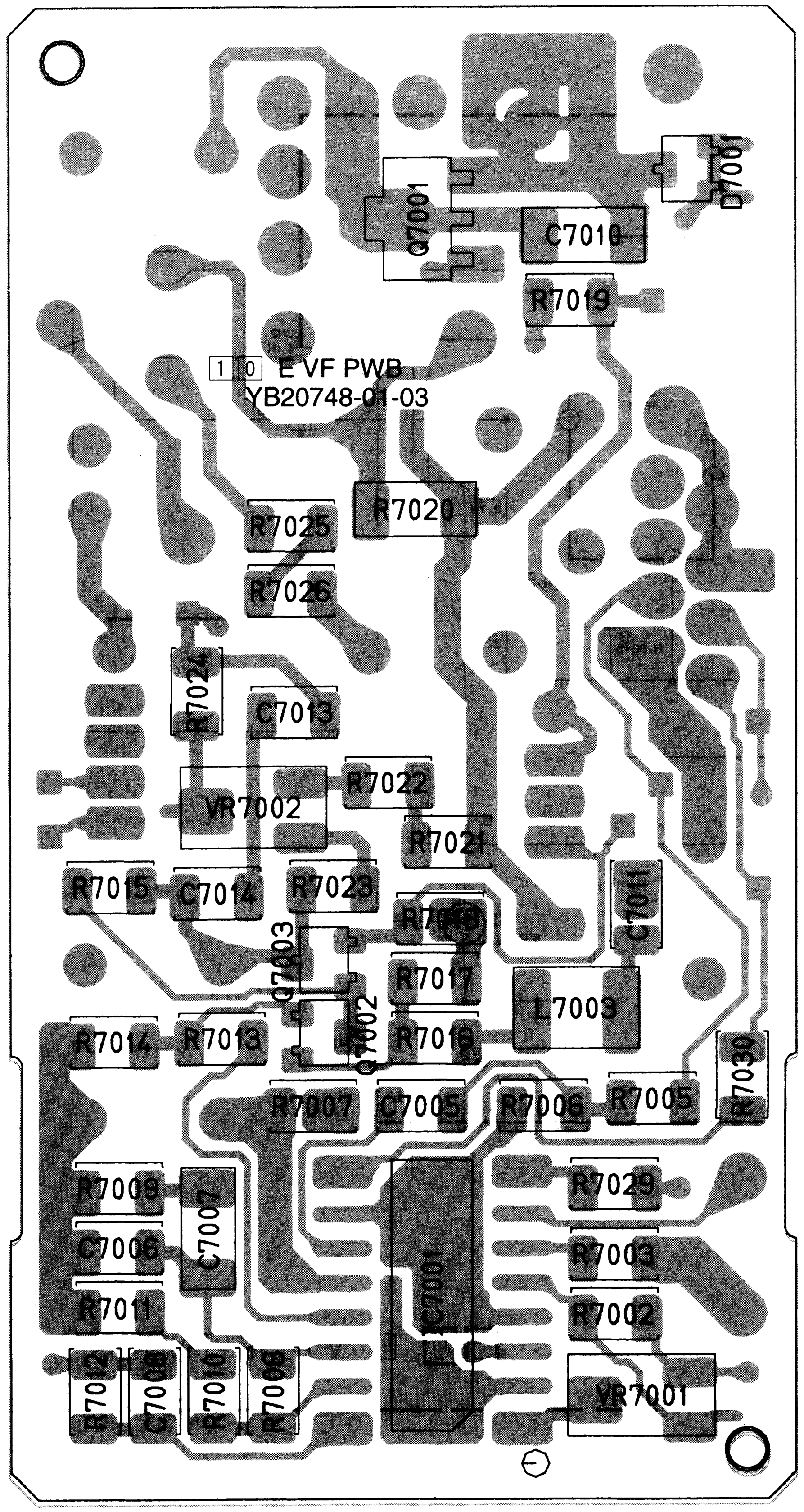
(TYPE T)


10 E VIEWFINDER
L7001
PELN1175
LINEARITY. COIL
C7009
100/10
C7010
0.0051/100
C7008
1
R7012
220
Q7001
2SD968A(RS)
C7007
1
R7009
10k
C7006
0.015
R7010
100k
R7008
390k
R7011
15k
C7003
100/10
R7007
33
C7005
1
VCC
GND
H. OSC
SHASE COMP
6dB AMP
SYNC SEPA
V. SEPA
V. DRIVER
V. OSC
VCC
GND
IC7001
BA7149F-XE
DEF. YOKE
CN7001
V1
V2
H2
H1
VR7001 220
V. SIZE
R7002
3.9
R7003
15k
C7001
0.1
MY
CN7002
NC
VF_REG_5V
MONO VF OUT
VF_VD
GND
VF_HD
TO
SYSCON, JACK
CN206
(Page 4-32,38)
R7029 1k
R7030 1k
R7005
1K
R7006
11K
C7002
100/10
D7001
MA142WA
T7001
PELN1174
HV
L7002
100μ
C7004
100/10
R7019
12
C7011
18P
CH
L7003
68μ
R7017
4.7K
R7016
1.2K
Q7002
2SA1748(QR)
R7013
1K
R7014
4.7K
R7018
22K
R7015
22K
C7012
1/50
Q7003
2SA1748(QR)
C7013
0.1/50
C7014
0.1/50
C7015
150p/1000
VR7003
5.6M
FOCUS
R7025
2.7M
R7026
2.7M
R7020
6.8M
R7021
4.7M
R7022
4.7M
C7016
330P/500
VR7002
2M
R7024
1M
BRIGHT
R7023
560K
H.V
G3
G2
G1
HK
H
CN7003
CRT_SOCKET
5
4
3
2
1
A
B
C
D
E
F
G
H

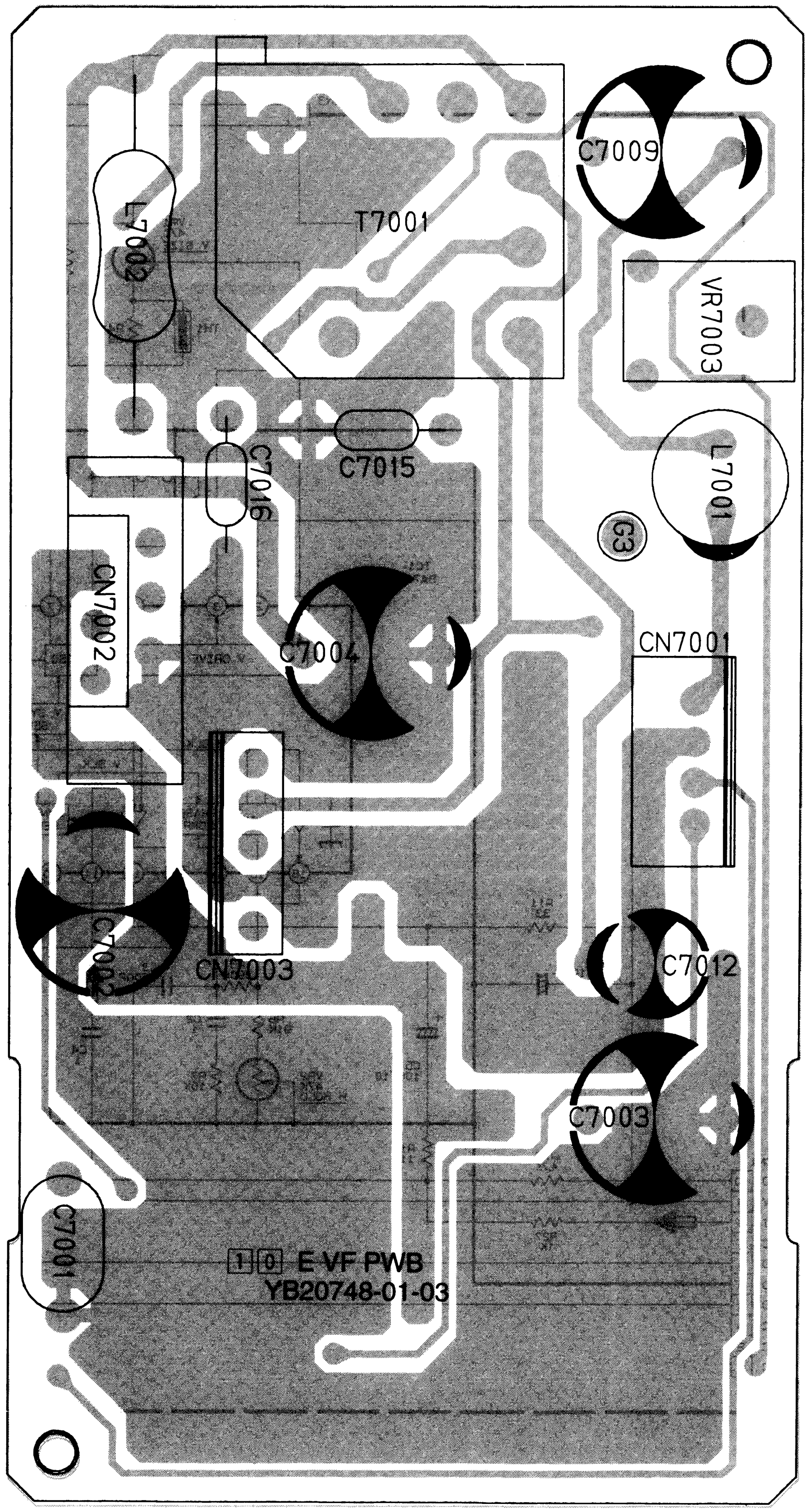
4.27 ELECTRONIC VIEWFINDER CIRCUIT BOARD (For SZ5000EG)

(TYPE T)

FOIL SIDE (B)

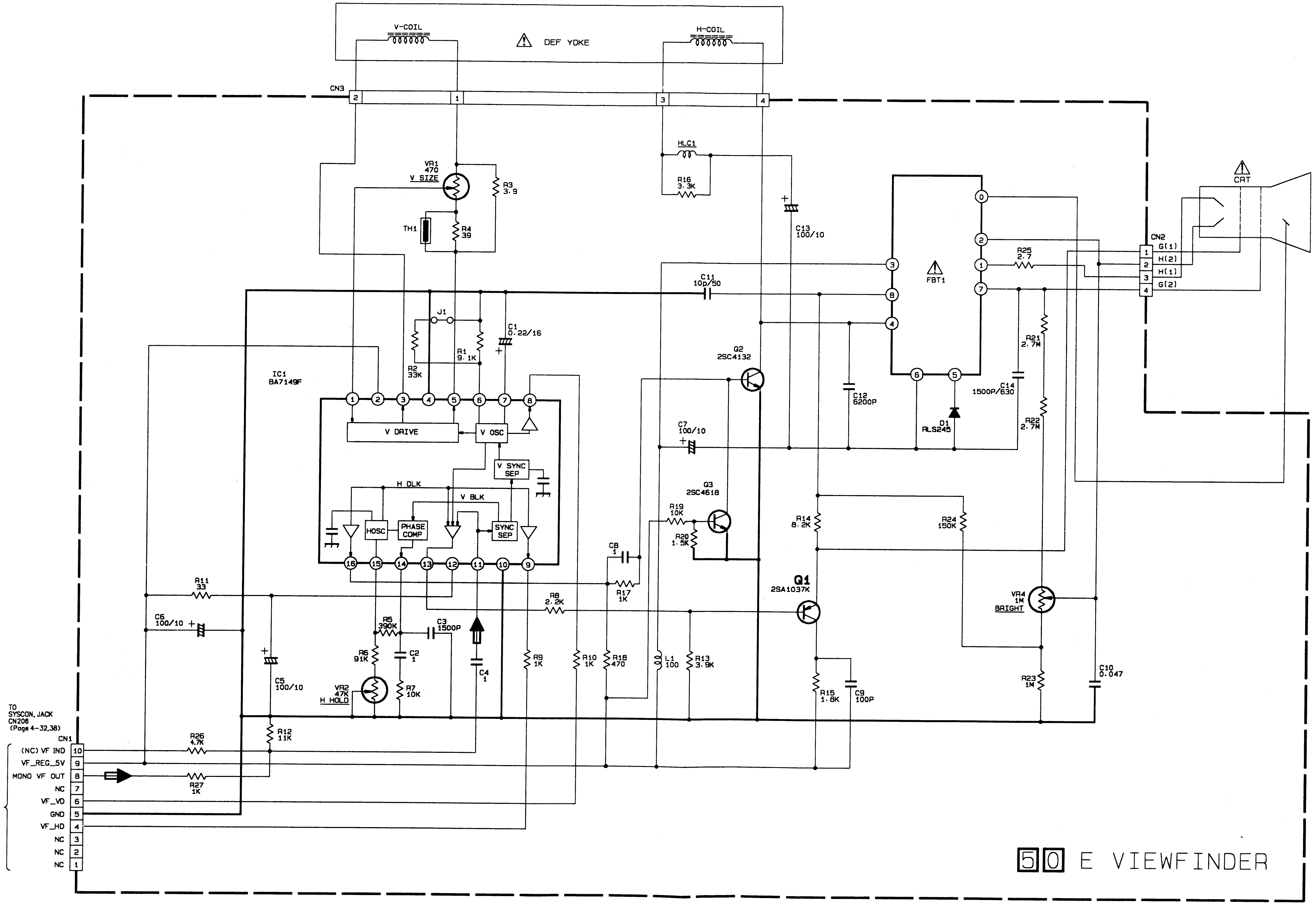

D7001
Q7001
C7010
R7019
1 0 E VF PWB
YB20748-01-03
R7025
R7020
R7026
R7024
C7013
R7022
VR7002
R7021
R7015
C7014
R7023
R7018
C7011
Q7003
R7017
Q7002
L7003
R7016
R7014
R7013
R7030
R7007
C7005
R7006
R7005
R7009
C7007
R7029
C7006
IC7001
R7003
R7011
R7002
R7012
C7008
R7010
R7008
VR7001

COMPONENT SIDE (A)


C7009
T7001
L7002
VR7003
C7016
C7015
L7001
G3
CN7002
C7004
CN7001
C7002
CN7003
C7012
C7003
C7001
1 0 E VF PWB
YB20748-01-03

4.28 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM

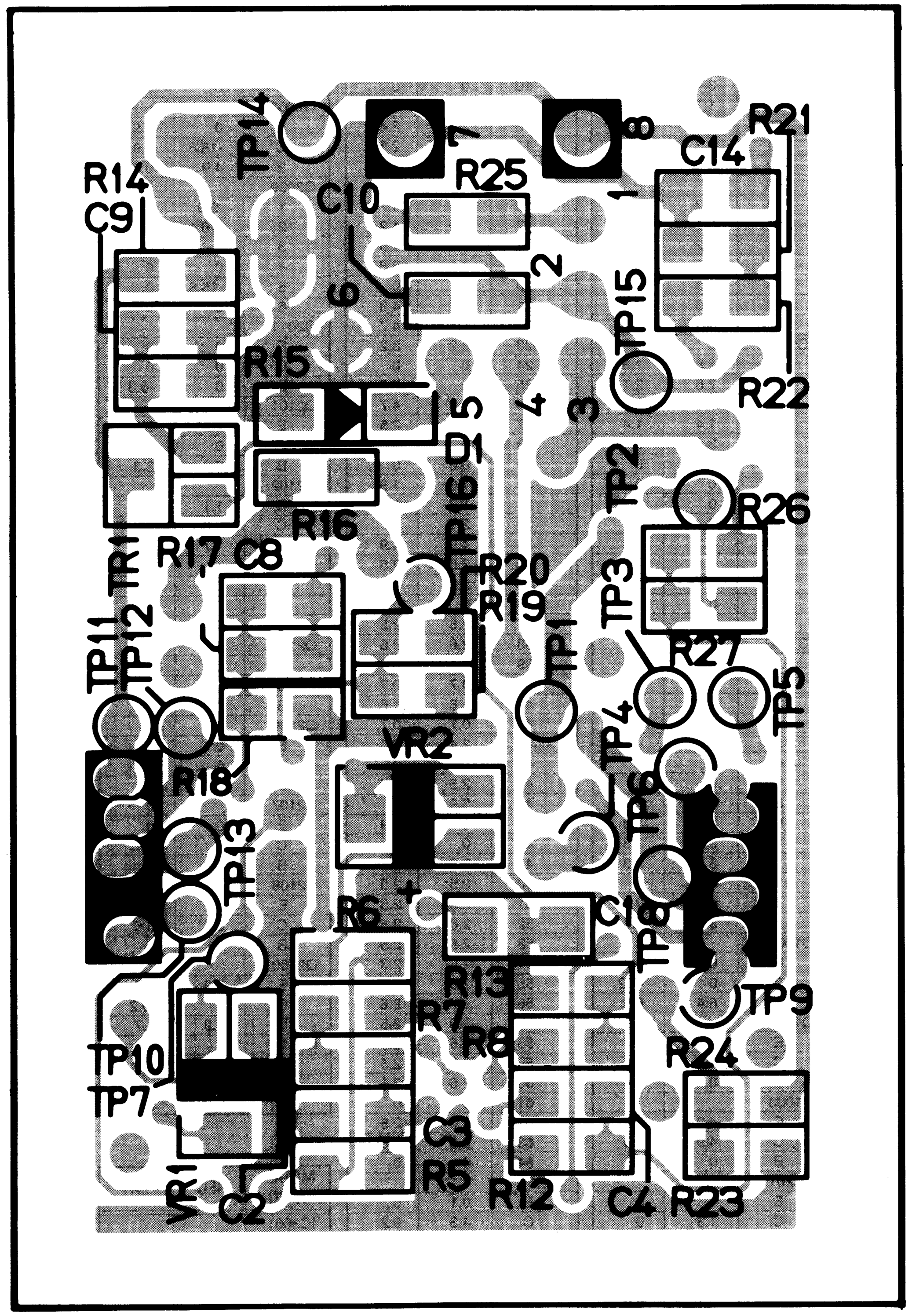
(TYPE M)


V-COIL
DEF YOKE
H-COIL
CN3
HLC1
R16 3.3K
VR1 470 V SIZE
R3 3.9
TH1
R4 39
C13 100/10
CRT
CN2
G(1)
H(2)
H(1)
G(2)
R25 2.7
FBT1
C11 10p/50
J1
C1 0.22/16
R1 9.1K
R2 33K
IC1 BA7149F
Q2 2SC4132
C12 6200P
R21 2.7M
C14 1500P/630
D1 RLS245
R22 2.7M
V DRIVE
V OSC
V SYNC SEP
H BLK
V BLK
HOSC
PHASE COMP
SYNC SEP
C7 100/10
Q3 2SC4618
R19 10K
R20 1.5K
R14 8.2K
R24 150K
C8 1
R17 1K
Q1 2SA1037K
VR4 1M BRIGHT
R11 33
R8 2.2K
C6 100/10
R5 390K
C3 1500P
R6 91K
C2 1
C5 100/10
VR2 47K H HOLD
R7 10K
C4 1
R9 1K
R10 1K
R18 470
L1 100
R13 3.9K
R15 1.8K
C9 100P
R23 1M
C10 0.047
TO SYSCON, JACK CN206 (Page 4-32,38)
CN1
(NC) VF IND
VF_REG_5V
MONO VF OUT
NC
VF_VD
GND
VF_HD
NC
NC
NC
R26 4.7K
R27 1K
R12 11K
50 E VIEWFINDER

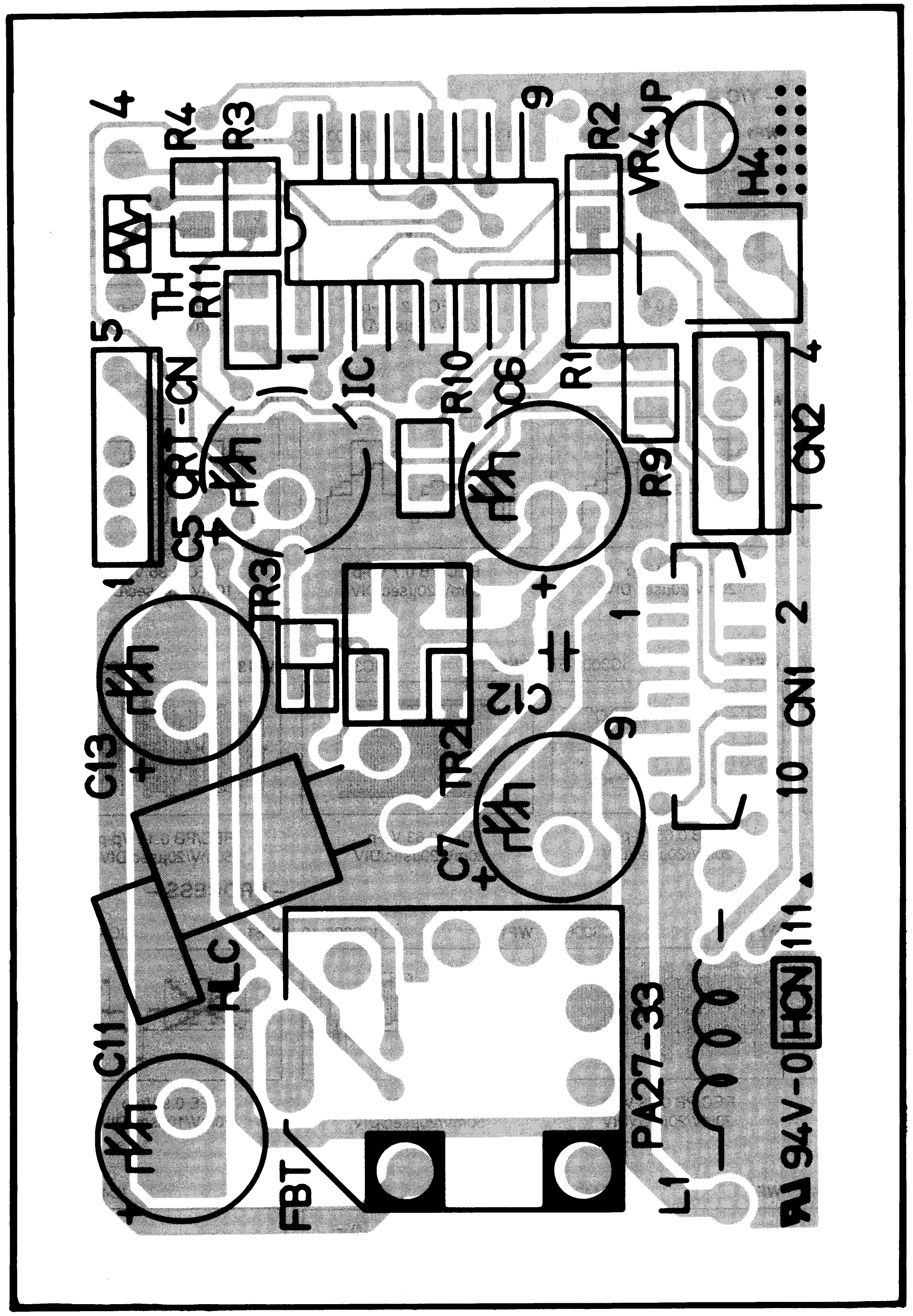
4.29 ELECTRONIC VIEWFINDER CIRCUIT BOARD

(TYPE M)

FOIL SIDE (B)


TP14
7
8
R21
R25
C14
R14
C9
C10
1
2
6
TP15
R15
5
4
3
R22
D1
TP16
TP2
R26
R16
R17
C8
TR1
R20
R19
TP3
TP11
TP12
TP1
R27
TP5
TP4
VR2
R18
TP6
TP13
R6
C1
TP8
R13
R7
R8
TP9
TP10
TP7
R24
C3
R5
R12
C4
R23
VR1
C2

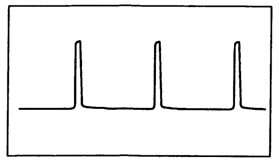
COMPONENT SIDE (A)


4
R4
R3
9
R2
VR4
JP
H4
TH
R11
5
CRT-CN
1
IC
R10
Q6
R1
4
CN2
R9
C5
TR3
1
1
2
C12
CN1
C13
TR2
6
10
C7
111
HLC
C11
PA27-33
HCN
94V-0
FBT
L1

4.30 WAVEFORMS

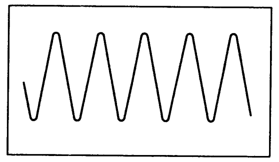
- MECHACON -

WF1 IC1001-66



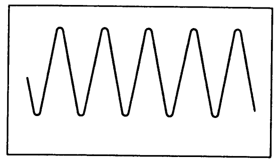
REC/PB 1.9 Vp-p
50mV/5msec/DIV

WF2 IC1001-67



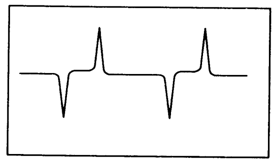
REC/PB 0.56 Vp-p
20mV/2msec/DIV

WF3 IC1001-68



REC/PB 2.6Vp-p
50mV/2msec/DIV

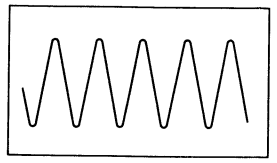
WF4 IC1001-73



PB 1.4 Vp-p
50mV/5msec/DIV

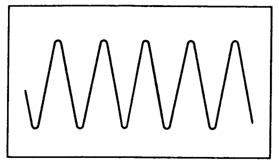
- MDA -

WF1 IC1602-7



REC/PB 0.6Vp-p
50mV/2msec/DIV

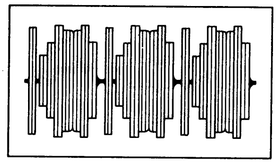
WF2 IC1651-15



REC/PB 3.1 Vp-p
0.1V/0.5msec/DIV

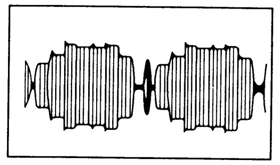
- Y/C -

WF1 IC3002-18



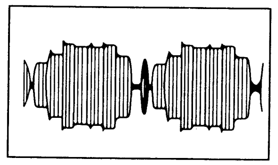
REC/PB 0.4 Vp-p
20mV/20µsec/DIV

WF2 IC3002-20



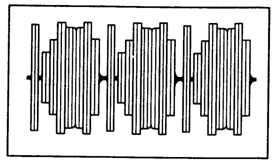
REC 0.2 Vp-p
20mV/20µsec/DIV

WF3 IC3002-25



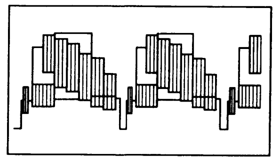
PB 0.9 Vp-p
50mV/20µsec/DIV

WF4 IC3002-27



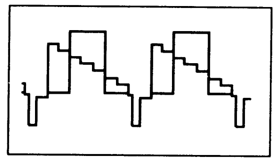
RECPB 0.8 Vp-p
50mV/20µsec/DIV

WF5 IC3002-31



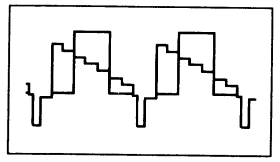
REC/PB 1.4 Vp-p
50mV/20µsec/DIV

WF6 IC3001-40



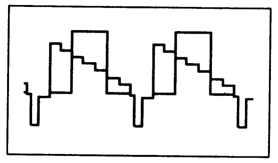
PB 0.7 Vp-p
20mV/20µsec/DIV

WF7 IC3002-44



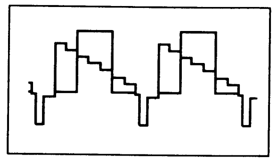
REC/PB 0.7 Vp-p
20mV/20µsec/DIV

WF8 IC3002-46



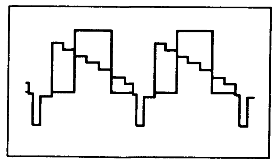
REC 0.36 Vp-p
10mV/50msec/DIV

WF9 IC3002-55



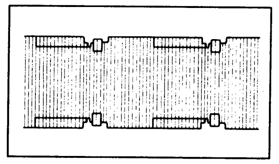
REC/PB 0.3 Vp-p
10mV/5msec/DIV

WF10 IC3002-57



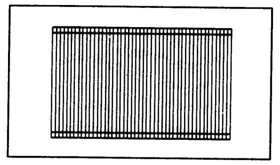
REC/PB0.33 Vp-p
10mV/20µsec/DIV

WF11 IC3002-67



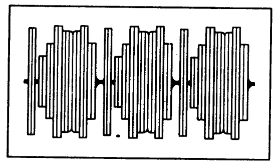
PB 0.65Vp-p
20mV/20µsec/DIV

WF12 IC3002-70



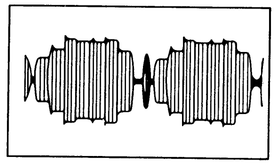
REC0.63 Vp-p
20mV/20µsec/DIV

WF13 IC3002-77



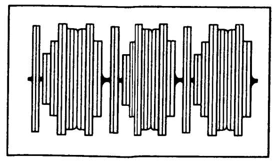
REC/PB 0.12 Vp-p
50mV/20µsec/DIV

WF14 IC3002-79



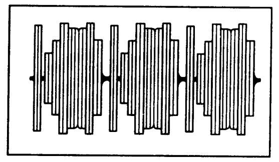
PB 0.16 Vp-p
50mV/20µsec/DIV

WF15 IC3002-80



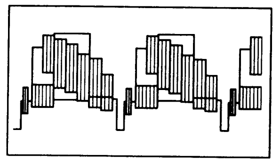
REC 0.34 Vp-p
10mV/20µsec/DIV

WF16 IC3006-7



REC/PB 0.73 Vp-p
20mV/20µsec/DIV

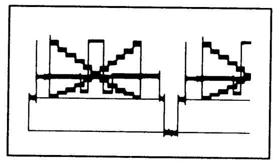
WF17 IC3006-10



REC/PB 1.6 Vp-p
50mV/20µsec/DIV

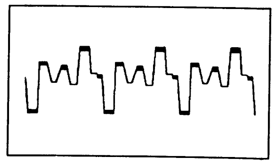
- PROCESS -

WF1 IC4201-61



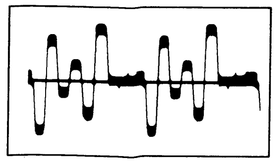
EE 0.9 Vp-p
20mV/10µsec/DIV

WF2 IC4201-57



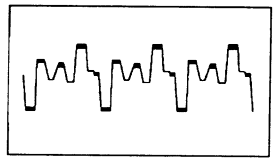
EE 0.6 Vp-p
20mV/20µsec/DIV

WF3 IC4201-53



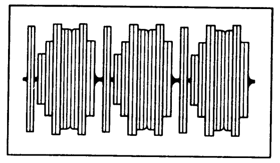
EE 0.6 Vp-p
10mV/20µsec/DIV

WF4 IC4401-1



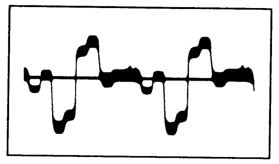
EE 0.5 Vp-p
20mV/10µsec/DIV

WF5 IC4401-11



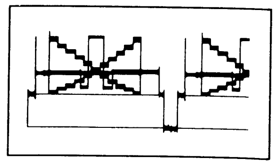
EE 2.0 Vp-p
50mV/1µsec/DIV

WF6 IC4401-23



EE 0.45 Vp-p
20mV/20µsec/DIV

WF7 IC4001-10



EE 0.9 Vp-p
20mV/20µsec/DIV

4.31 VOLTAGE CHARTS

<MECHACON/SERVO>

MODE PIN NO.	REC	PLAY
IC1001		
1	0	2
2	0	3.3
3	0.9	0.9
4	1.8	1.8
5	0	0
6	2.1	3.3
7	0	0
8	0	0
9	0	0
10	3.3	3
11	0	3.3
12	0.4	0.4
13	-	-
14	1.6	1.6
15	0.2	0.2
16	-	-
17	1.6	1.6
18	0	3.3
19	0	3.3
20	0	3.3
21	0	0
22	0	0
23	0	3.3
24	3.3	0
25	3.3	0
26	3.3	3.3
27	0	0
28	3.4	3.4
29	0	0
30	0	0
31	3.3	3.3
32	3.3	3.3
33	-	-
34	-	-
35	0	0
36	0	0
37	3.3	3.3
38	1.4	1.4
39	1.4	1.4
40	3.3	3.3
41	0	0
42	0	0
43	2.4	2.2
44	3.4	3.4
45	3.4	3.4
46	0	0
47	3.4	3.4
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	3.3
54	0	3.3
55	3.3	0
56	0	0
57	0	0
58	0	0
59	3.3	3.3
60	0	0
61	0.4	0.4
62	0	0
63	3.3	3.3
64	0	0
65	3.4	3.4
66	0.6	0.7
67	1.7	1.7
68	1.7	1.7
69	1.7	1.7
70	1.7	1.7
71	1.8	1.7
72	1.5	1.6
73	1.6	1.6
74	1.7	1.7
75	1.7	1.7
76	0	0
77	1.6	0
78	1.3	0
79	0	0
80	0	0
81	3.3	3.3
82	3.4	3.4
83	0	0
84	0	0
85	0	0
86	0	0
87	3.4	3.4
88	3.4	3.4
89	1.7	1.7
90	1.6	1.6
91	3.3	3.3
92	3.1	3.3
93	0	0
94	2.3	2
95	3.2	3.2
96	3.2	3.3
97	2.5	2.5
98	3.3	3.3
99	3.3	3.3
100	0	0
IC1002		
1	1.8	1.8
2	2.6	2.7
3	0.9	0.9
4	1.4	1.4
5	3.3	0
6	4.9	0
7	0	0
8	0	0
9	0	0
10	3.3	3.3
11	0	0
12	0	0
13	0	0
14	4.9	5
IC1003		
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	0	0
8	0	0
9	3.3	3.3
10	3.3	3.3
11	3.3	3.3
12	0	0
13	0	0
14	3.3	3.3
Q1001		
E	6.5	6.6
C	0	-0.2
B	6.4	6.5
Q1002		
E	0	0
C	5.6	5.6
B	0.4	0.4
Q1003		
E	4.9	5
C	4.9	4.9
B	0	0
Q1201		
E	0	0
C	1.3	0
B	0	3.3
Q1202		
E	0	0
C	0.1	4.9
B	0.7	0

<AUDIO>

MODE PIN NO.	REC	PLAY
IC2101		
1	4.9	4.7
2	4.9	3.8
3	2.5	2.5
4	4.4	4.4
5	0.6	0.4
6	2.6	2.4
7	0.5	0.7
8	1.9	1.9
9	0.7	0.6
10	0	0
11	2.5	2.5
12	2.6	2.4
13	2.6	2.5
14	2.6	2.5
15	2.5	2.5
16	4.9	4.7
17	1.9	1.9
18	1.9	1.9
19	0.1	2.8
20	0	0
21	4.8	4.8
22	4.7	4.7
23	3.2	3.2
24	0	0
25	0	2.5
26	4.9	4.7
27	2.5	2.5
28	0	0
29	0.3	0
30	1.9	1.9
31	1.8	1.9
32	2.1	0
33	4.9	4.9
34	2.5	2.5
35	2.6	2.6
36	0	0
37	2.6	2.5
38	2.6	2.6
39	0	0
40	0.7	0.7
41	1.6	1.6
42	0.7	0.7
43	2.4	2.5
44	4.9	0
45	2.5	2.5
46	3.9	0
47	5	4.9
48	0	0
49	2.6	2.5
50	2.5	2.5
51	2.5	2.5
52	2.6	2.5
53	2.5	2.5
54	2.6	2.3
55	2.6	2.5
56	2.7	2.6
57	2.5	2.5
58	2.5	2.5
59	2.5	2.5
60	2.6	2.5
61	0	0
62	2.6	2.5
63	2.6	2.6
64	0	0
Q2001		
E	0.1	0
C	4.3	0.2
B	0.2	0.2
Q2002		
E	4.9	4.9
C	4.7	0.3
B	0.1	4.9
Q2003		
E	4.7	0.3
C	0	0
B	0	0.3
Q2005		
E	0	0
C	0	0
B	2.3	0
Q2006		
E	0	0
C	0	3.9
B	2.3	0
Q2007		
E	0	0
C	4.9	0
B	0	3.9
Q2008		
E	0	4.9
C	-15.8	4.9
B	4.9	0.4
Q2009		
1	-9.9	0
2	-16.1	0.7
3	0	0
4	0	0
5	-15.8	0
6	0	0
Q2011		
E	0	0
C	0	0
B	0	-0.3
Q2101		
E	2.7	2.6
C	0	4.4
B	3.3	3.3
Q2102		
E	1.1	1.1
C	3.3	3.2
B	1.7	1.7
Q2103		
E	0	0
C	0	0
B	0	0
Q2105		
E	0	0
C	0	0
B	3.2	3.2
Q2106		
E	0	0
C	0	0
B	0	0
Q2107		
E	0	0
C	0	0
B	0	0
Q2108		
E	0	0
C	3.6	3.6
B	0	0
Q2109		
E	4.9	4.9
C	0	-0.2
B	4.9	4.7
Q2110		
E	4.9	4.9
C	0	–0.3
B	3.8	3.8

<Y/C>

MODE PIN NO.	REC	PLAY
IC3001		
1	0	0
2	2.5	1.9
3	0	0
4	2.7	2.7
5	0	0
6	2	2
7	4.9	4.9
8	1.7	1.2
IC3002		
1	0.2	0.2
2	0	0
3	4.8	4.8
4	0.4	0.1
5	2.5	2.5
6	2.3	2.3
7	4.8	4.8
8	2.3	2.3
9	2.6	2.6
10	2.7	2.7
11	2.7	2.7
12	1.4	1.4
13	3.5	3.5
14	1.3	1.1
15	2	2
16	1.8	0.1
17	2	2
18	2	2
19	2.6	2.6
20	2	2
21	2	1.9
22	0	0
23	2	2
24	0	0
25	2.8	2.7
26	2.8	2.8
27	2	2
28	2	2
29	0	0
30	3	3
31	2.3	2.8
32	2.7	2.7
33	2.3	2.9
34	2.8	2.8
35	1.7	2.3
36	0	0
37	1.9	1.9
38	0.4	0.1
39	2	1.8
40	3.4	3.5
41	2.9	2
42	1.9	0.8
43	3.4	3.3
44	2.5	1.9
45	1.3	1.3
46	2.4	1.9
47	1.7	1.5
48	2.4	2.2
49	1.7	0.8
50	2.3	2.4
51	0	3.1
52	0	0
53	3.1	3.1
54	2.2	2.1
55	3	3.1
56	1.4	1.6
57	2.1	2.2
58	1.8	1.8
59	0	0.9
60	2.5	0
61	0	0.7
62	2.1	0.6
63	2.1	0.5
64	0	4.8
65	4.8	0
66	0.5	0.5
67	0	2.8
68	0	0
69	0	0
70	3.1	0
71	4.9	4.9
72	0	0
73	1.1	1.1
74	2.7	2.7
75	2.7	0
76	2.9	2.9
77	2.7	2.7
78	0	4.8
79	2	2

MODE PIN NO.	REC	PLAY
80	2.1	3.9
IC3003		
1	0	0
2	5	5
3	0	0
4	5	5
5	0	0
6	0	0
7	2.4	2.4
8	0	2.3
9	3.9	4.4
10	1.3	1.3
11	1.9	2.2
12	10	10
13	0	0
14	1.8	1.8
15	1.3	1.3
16	3.6	3.7
IC3004		
1	4.9	0.3
2	4.9	5
3	0.8	1
4	3	3
5	2.9	2.9
6	4.6	4.6
7	2.3	2
8	1.6	1.4
9	1.6	1.4
10	2.4	2.4
11	2.4	2.4
12	2.4	2.4
13	0	0
14	3.1	3
15	3	3
16	3.1	3.1
IC3005		
1	0	0
2	3.4	2.1
3	0	0.5
4	4.4	2.2
5	0	1.6
6	3	3
7	0	0
8	2.1	2.1
9	0	4.2
10	0	0.5
11	2.1	2.1
12	2.9	2.9
13	0	3
14	2.7	1.1
15	2.7	1.1
16	4	4
17	0	1.5
18	4.9	4.9
19	0	3.7
20	2.8	2.7
IC3006		
1	0.4	0.2
2	0.5	0.3
3	0	0
4	4.9	4.9
5	2	2
6	0	0
7	2.1	1.9
8	0	0
9	2.2	2.6
10	2.2	2.6
11	2.2	2.7
12	2.2	2.8
13	0	0
14	0	0
15	2.5	2.5
16	4.9	4.9
IC3011		
1	0.4	0.1
2	0	4.9
3	0	0
4	2.4	2.4
5	0	0
6	2.7	2.7
7	0	0
8	0.1	0.1
9	2	2
10	4.9	4.9
11	2	2
12	0.4	0.1
13	1.5	1.5
14	1.8	1.8
15	1.8	1.8
16	1.2	1.2
17	0	4.2
18	1	1
19	0	0
20	4.1	4.1
Q3006		
E	0	0
C	0	4.9
B	4.4	0
Q3007		
E	0	0
C	0	0
B	0	4.5
Q3008		
E	2	2
C	0	0
B	1.4	0
Q3009		
E	3.4	3.5
C	0	0
B	1.7	1.2
Q3011		
E	3	3
C	0	0
B	3.7	3.7
Q3012		
E	1.7	1.7
C	0	4.8
B	2.3	2.3
Q3013		
E	3.3	3.5
C	0	4.8
B	3.9	4.5
Q3014		
E	1.7	2
C	4.8	4.8
B	2.3	2.7
Q3015		
E	1.7	1.7
C	0	0
B	1.1	1.1
Q3016		
E	0	0
C	0	2.8
B	0	0.3
Q3017		
E	4.8	4.8
C	1.4	1.4
B	4.8	4.8
Q3018		
E	0	0
C	0	4.8
B	0	0
Q3019		
E	2.5	2.5
C	4.2	4.2
B	3.2	3.1
Q3020		
E	4.8	4.8
C	4.1	4
B	4.2	4.2
Q3021		
E	0	3.5
C	4.8	4.8
B	4	4
Q3022		
E	0	0
C	0	0
B	0	0
Q3023		
E	0	0
C	0.4	4.8
B	0	0
Q3024		
E	0	0.9
C	0	0
B	0	2.7
Q3025		
1	0.3	2.7
2	0	0.1
3	0.3	4.8
4	0.3	2.7
5	0.9	4
6	0.4	4.8
Q3026		
E	0.9	0
C	0	4
B	0.6	0
Q3027		
E	0	0
C	0.9	3.9
B	0	0.5
Q3028		
E	0	0
C	0	0.1
B	0.9	3.9
Q3029		
E	0	0
C	0.9	3.9
B	0	0.5
Q3031		
1	0.8	0.4
2	1.5	1.4
3	4.8	4.8
4	1.4	0
5	2	3.9
6	3.5	3.5
Q3032		
E	4.9	4.9
C	0.4	4.8
B	4.9	4.2
Q3033		
E	1.7	1.9
C	0	0
B	1.1	0

<SYSCON>

MODE PIN NO.	REC	PLAY
C101		
1	2.6	0.2
2	1.8	0.2
3	1.4	0.2
4	3.3	3.3
5	3.1	0.2
6	3.2	0.2
7	3.3	0.1
8	3.2	0.1
9	0	0
10	3.3	0.2
11	3.3	0.2
12	3.3	0.2
13	0	0
14	3.3	3.3
15	0	3.3
16	0	0
17	3.3	3.3
18	0	0
19	3.3	3.3
20	0	0
21	3.3	0
22	0	0
23	-	0
24	0	0
25	0	0
26	0	0
27	3.3	3.3
28	1.9	1.9
29	3.3	3.3
30	1.6	1.6
31	1.6	1.6
32	0	0
33	0	0
34	0	0
35	0	0
36	3.3	0
37	0	0
38	0	0
39	3.3	3.3
40	3.3	3.3
41	2.1	3.3
42	0	0
43	0.6	0.6
44	0	0
45	0	0
46	0	0
47	3.3	3.3
48	3.3	3.3
49	3.3	3.3
50	3.3	0
51	0	0
52	3.3	3.3
53	3.3	3.3
54	0	0
55	3.3	0
56	3.2	3.2
57	3.2	0
58	3.3	3.3
59	0	0
60	1.5	0
61	1.5	0
62	3.3	3.3
63	3.3	0.1
64	3.3	0.1
65	3.3	0
66	0	0
67	3.3	3.3
68	3.3	0
69	0	0
70	2.9	2.9
71	3.3	3.3
72	3	3
73	1.5	0
74	0	0
75	3.3	3.3
76	3.3	3.3
77	2	0
78	2.9	2.8
79	2.1	2.2
80	0	0
81	0	0
82	3.3	3.3
83	0	0
84	0	0
85	0	0
86	-	3.1
87	0	0
88	0	0
89	0	0
90	2.5	2.5
91	3.4	3.4
92	3.3	3.3
93	3.3	3.3
94	3.3	3.3
95	3.3	3.3
96	3.3	3.3
97	0	0
98	3.2	3.2
99	0	0
100	3.3	3.3
101	3.1	0
102	3.1	3.1
103	0	3.1
104	3.1	3.1
105	1.7	3.2
106	1.7	0
107	0	0
108	0.2	0
109	0	0
110	0.2	0.2
111	0.2	0.2
112	3.2	2.4
113	3.2	2.4
114	3.2	2.4
115	1.6	1.6
116	1.6	1.6
117	1.6	1.6
118	3.3	3.3
119	0.3	0.2
120	2.4	0.2
121	1.1	0.2
122	1.9	0.2
123	0	0
124	2	0.2
125	2.3	0.2
126	1.1	0.2
127	1.4	0.2
128	1.6	0.2
IC102		
1	2.6	2.6
2	0.6	0.6
3	2.3	2.3
4	3.4	3.4
5	3.4	3.4
6	0	0
7	1.4	1.3
8	1.4	1.4
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	3	3
20	2.8	2.8
IC103		
1	0	0
2	3.2	3.3
3	2.3	1.9
4	0	0
5	3.1	3.1
6	0.6	0.5
7	0.5	0.4
8	3.2	3.2
IC104		
1	3.3	3.3
2	2.4	2
3	3.3	3.3
4	0	0
5	3.2	3.2
6	3.3	3.3
7	3.3	3.3
8	3.3	3.3
IC106		
1	0	0
2	3.1	3.1
3	0	0
4	0	0
5	3.3	3.3
IC107		
1	0	0
2	0	0
3	0	0
4	3.3	3.2
5	3.3	3.3
IC108		
1	3.4	3.4
2	3.2	3.3
3	0	0
4	3.3	3.3
5	3.3	3.3
IC109		
1	3.2	3.2
2	3.3	3.3
3	3.2	3.2
4	3.3	3.3
5	3.2	3.2
6	3.2	3.2
7	0	0
8	3.3	3.3
9	3.1	3.1
10	3.1	3.1
11	3.3	3.2
12	3.3	3.3
13	3.3	3.3
14	3.3	2.8
IC110		
1	3.2	3.2
2	3.2	3.2
3	0	0
4	1	1.4
5	0	0
6	0	0
7	0	0
8	3.4	3.4
9	-	-
10	1.6	1.6
11	2.7	2.7
12	2.6	2.6
13	2.7	2.7
14	2.9	2.9
15	1.2	1.2
16	1.7	1.7
17	2.5	2.5
18	2.6	2.6
19	1.9	1.1
20	1	1
21	1.4	1.4
22	1.2	1.2
23	1.4	1.4
24	0.9	0.9
25	0	2.8
26	1.6	1.6
27	0	0
28	0	0
29	3.4	3.4
30	0	0
31	3.4	3.4
32	0	0
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	1.7	1.7
39	2.2	2.2
40	1.2	0
41	1.2	1.2
42	2.7	2.3
43	0.9	0.9
44	1.6	1.6
45	1	1
46	1.7	1.7
47	1.9	1.9
48	3.3	3.3
IC111		
1	0	0
2	6.7	6.7
3	3.3	3.3
Q102		
E	0	0
C	1.1	2
B	0	0
Q103		
E	6.5	6.7
C	6.5	6.7
B	5.7	5.9
Q104		
E	0	0
C	0	0
B	3.2	3.2
Q106		
E	4.9	5
C	4.9	-1.1
B	0	4.9
Q107		
E	0	0
C	0	3.3
B	3.3	0
Q108		
E	0	0
C	0	5
B	3.3	0

<MDA>

MODE PIN NO.	REC	PLAY
IC1601		
1	1.5	1.5
2	6.7	6.7
3	0.4	0.4
4	1.5	1.5
5	1.5	1.5
6	1.5	1.5
7	0.7	0.7
8	0	0
9	0.6	0.6
10	0.6	0.6
11	0.6	0.6
12	1.1	1.1
13	0	0
14	4.9	4.9
15	0	0
16	4.9	4.9
17	4.9	4.9
18	0	0.6
19	5.9	5.9
20	2.8	2.8
21	2.8	2.8
22	1.5	1.5
23	2.8	2.8
24	2.5	2.5
25	0.6	0.6
26	6.7	6.7
27	6.7	6.7
28	6.7	6.7
29	1.5	1.5
30	0	0
31	1.5	1.5
32	0	0
IC1602		
1	0	0
2	0	0
3	0	0
4	5	5
5	2.4	2.4
6	2.4	2.4
7	2.4	2.4
8	2.4	2.4
9	2.4	2.4
10	2.4	2.4
11	0	0
12	2.3	2.3
13	2.4	2.4
14	0.9	0.9
IC1651		
1	0	0
2	2.3	2.3
3	2.1	2.1
4	1.2	1.2
5	0	0
6	1.5	1.5
7	1.1	1.1
8	0.5	0.5
9	3.9	3.9
10	0.6	0.6
11	0	0
12	0	0
13	0	0
14	4.9	4.9
15	2.4	2.5
16	2.5	2.5
17	2.4	2.5
18	4.1	4.2
19	0	0
20	2.5	2.5
21	2.5	2.5
22	2.5	2.5
23	2.5	2.5
24	2.5	2.5
25	2.5	2.5
26	1.6	1.6
27	1.6	1.6
28	1.6	1.6
29	0.7	0.7
30	0.7	0.7
31	0.7	0.7
32	0	0
IC1701		
1	0.3	0.3
2	6.7	6.8
3	4.9	4.9
4	0	0
5	0	0
6	4	4.1
7	0.3	0.3
8	0	0

<PRE/REC & FLY. ERASE>

MODE PIN NO.	REC	PLAY
IC3501		
1	0	2.4
2	3.3	3.3
3	2.9	2.9
4	0	2.9
5	3.5	0
6	1.5	1.5
7	0	0
8	0.4	0
9	1.5	1.5
10	1.4	1.4
11	1.7	1.8
12	0	5
13	0	1.3
14	0.8	0.5
15	-0.2	0.7
16	0	0.6
17	4.3	0
18	0	0
19	0	0.6
20	-0.2	0.6
21	0.7	0.5
22	4.3	0
23	0.8	0.5
24	-0.2	0.7
25	0	0.6
26	4.3	0
27	0	0
28	0	0.6
29	0.8	0.5
30	4.3	0
31	-0.2	0.7
32	0	0
33	4.1	0
34	0	1.3
35	4.1	0
36	0	0.6
37	0	0
38	4.1	0
39	0	0.6
40	1.2	0
41	0	0
42	4.1	0
43	0	0.6
44	0	0
45	4.1	0
46	0	0.6
47	4.1	0
48	0	1.3
49	4.8	0
50	0	4.8
51	1.6	1.8
52	1.4	1.4
53	1.5	1.5
54	0.6	0.3
55	0	0
56	1.3	1.3
57	0.5	0.5
58	0	1.3
59	2.9	2.9
60	3.2	3.3
61	1.6	1.8
62	0.8	0.8
63	0	3.2
64	2.9	2.9
IC3502		
1	1.6	1.6
2	0	3.3
3	1.6	1.6
4	0	0
5	1.5	1.5
6	0	3.3
7	1.5	1.5
8	3.3	3.3
IC3503		
1	3.3	3.3
2	5	5
3	5	5
4	0	0
Q3501		
E	0	0
C	0	0
B	0	5
Q3502		
E	0	2.6
C	1.6	4.2
B	0	3.3
Q3503		
E	4.9	4.9
C	4.8	0.1
B	1.6	4.2
Q3504		
E	4.9	4.9
C	0	4.8
B	4.9	4.2
Q3505		
E	0	0
C	0	0.9
B	3.5	0
Q3506		
E	0	0
C	0	0
B	0.2	0
Q3507		
E	0.3	0
C	0.3	0
B	0.5	0.6
Q3508		
E	0	0
C	0.3	0
B	-0.3	0.7
Q3509		
E	0.3	0
C	0.2	0
B	0.8	0.5
Q3510		
E	0.3	0
C	0.3	0
B	0.6	0.5
Q3511		
E	0	0
C	0.3	0
B	-0.3	0.7
Q3512		
E	0.3	0
C	0.2	0
B	0.7	0.5
Q3513		
E	0	0
C	0.3	0
B	-0.3	0.7
Q3514		
E	0	2.6
C	1.6	4.2
B	0	3.3
Q3515		
E	5	5
C	4.8	0
B	1.6	4.2
Q3516		
E	5	5
C	0	5
B	4.9	4.2
Q3517		
E	0	0
C	0	0.8
B	3.5	0
Q3518		
E	3.3	3.2
C	1.2	0.8
B	0.6	0.3
Q3521		
E	1.2	1.4
C	0	0
B	0.4	0
Q3901		
E	0	0
C	0	0.1
B	0.7	0
Q3902		
E	0.7	0
C	0	0
B	0	0.1
Q3903		
E	4.2	0
C	0	0.1
B	0.7	0

<REAR>

MODE PIN NO.	REC	PLAY
IC6001		
1	4.1	4.2
2	7	7.1
3	6.4	6.5
4	0	0
5	1.4	1.4
6	1.2	1.2
7	1.2	1.2
8	4.1	3.2
9	0	0
10	1.9	1.8
11	0.2	0.2
12	0.2	0.3
13	6.7	6.8
14	0	0
15	1.8	1.8
16	1.2	1.2

MODE PIN NO.	REC	PLAY
17	1.6	1.6
18	6.7	6.8
19	2.5	2.5
20	6.7	6.8
21	6.7	6.8
22	6.7	6.8
23	0	0
24	1.3	1.3
25	1.3	1.3
26	1.3	1.3
27	1.6	1.6
28	1.8	1.8
29	2.5	2.5
30	2.5	2.5
31	2.5	2.5
32	0	0
33	2.5	2.5
34	4.9	5
35	6.4	6.5
36	6.7	6.8
37	6.3	6.3
38	0	0
39	6.7	6.8
40	6.3	6.4
41	2.3	2.3
42	0	0
43	1.8	1.9
44	6.4	6.5
45	6.7	6.8
46	6.2	6.2
47	2.4	2.4
48	5.9	6
Q6001		
E	6.7	6.8
C	6.7	6.8
B	0	0
Q6002		
E	0	0
C	0	0
B	4.3	4.3
Q6003		
E	6.7	6.8
C	5.4	5.4
B	6.1	6.2
Q6007		
1	0	0
2	6.4	6.5
3	6.8	6.8
4	2.9	2.9
Q6008		
E	15.2	15.3
C	16	16
B	15.9	15.9
Q6009		
E	15.2	15.3
C	15.1	0
B	0	15.2
Q6010		
E	0	0
C	0	15.2
B	4.7	0
Q6011		
E	6.7	6.8
C	2	2
B	6.3	6.3
Q6012		
E	-7.8	-12.2
C	-7.7	0
B	4.9	-12.1
Q6013		
E	5	5
C	4.9	-12.1
B	0.4	4.9
Q6014		
1	0	0
2	6.3	6.6
3	6.7	6.8
4	4	4

MODE PIN NO.	REC	PLAY
Q6015		
E	2.6	3.4
C	3.3	0.4
B	3.3	3.4
Q6016		
E	0	0
C	3.3	0.4
B	4.7	0
Q6201		
E	6.7	6.8
C	6.7	6.8
B	6	6.1
Q6202		
E	0	0
C	0	0
B	0.7	0.7
Q6203		
E	0	0
C	6.7	6.8
B	0	0
Q6204		
E	6.7	0
C	6.4	0
B	6.4	0.7
Q6205		
E	6.7	6.8
C	0	0
B	6.7	6.8

<MIC AMP>

MODE PIN NO.	REC	PB
IC2201		
1	2.2	2.2
2	2	2
3	2	2
4	2	2
5	2	2
6	2	2
7	2	2
8	2	2
9	0	0.1
10	0	2
11	0	0
12	0	0
13	4	4.1
14	2	2
15	0	0
16	0	0
17	2	2
18	2	2
19	2	2
20	2	2
21	2	2
22	2	2
23	2	2
24	1.1	1.1
25	2	2
26	1.2	1.2
27	2	2
28	0	0
29	2.5	2.5
30	2	2
31	2	2
32	2	2
Q2204		
E	1.5	1.5
C	4.2	4.2
B	2.1	2.1
Q2205		
E	1.5	1.5
C	4.1	4.2
B	2.1	2.1
Q2206		
E	4.1	4.2
C	4.9	4.9
B	4.8	4.9

<SOUND EFFECT>
(SZ7000EG ONLY)

MODE PIN NO.	REC	PB
IC2351		
1	4.7	4.8
2	0	0
3	0	0
4	0	0
5	4.7	4.8
6	0	0.
7	0	0
8	4.7	4.7
9	4.6	4.7
10	4.6	4.7
11	4.6	4.7
12	4.6	4.7
13	4.6	4.7
14	0	0
15	0	0
16	4.6	4.7
17	4.6	4.7
18	0	0
19	0	0
20	4.7	4.7
21	0	0
22	0.2	0.1
23	0	0
24	0	0
Q2351		
E	0	0
C	0	0
B	0.6	0.6
Q2352		
E	1.7	1.7
C	3.3	3.3
B	2.3	2.3
Q2353		
E	0	0
C	4.7	4.7
B	0	0
Q2354		
E	2.7	2.7
C	4.8	4.8
B	3.3	3.3

<AF/ZOOM>

MODE PIN NO.	EE
IC4801	
1	3.7
2	5
3	5
4	0
5	4.8
6	0
7	5
8	6.4
9	-
10	0
11	0
12	0
13	-
14	0.2
15	0
16	2.2
17	6.4
18	0
19	0
20	0
21	0
22	1.9
23	-
24	5
IC4802	
1	5
2	5
3	5
4	0

MODE PIN NO.	EE
5	4.8
6	0
7	5
8	6.5
9	1.3
10	0
11	0
12	1.3
13	0
14	0
15	0
16	0
17	6.5
18	0
19	0
20	4.9
21	5
22	2
23	0
24	5
IC4803	
1	2.4
2	3.7
3	1.1
4	2.5
5	0
6	0
7	0
8	5
9	3.3
10	5
11	0
12	0
13	0
14	5
Q4801	
E	0
C	4.9
B	0
Q4802	
E	0
C	4.6
B	0

<IRIS>

MODE PIN NO.	EE
IC4901	
1	0.8
2	0
3	0
4	0
5	2
6	2
7	2
8	6.5
IC4902	
1	2.1
2	0
3	2
4	5
5	2
6	2
7	2.1
8	2.4
9	2
10	2
11	0
12	0.2
13	0.2
14	0.9
IC4903	
1	2
2	2
2	2
3	0

MODE PIN NO.	EE
4	2
5	0
Q4901	
E	0.2
C	1.6
B	0.8
Q4902	
E	2.8
C	5
B	3.4
Q4903	
E	2.8
C	2
B	2
Q4904	
E	2.8
C	1.5
B	1.5
Q4905	
E	0
C	0.1
B	5
Q4906	
E	6.4
C	6.4
B	5.6

<PROCESS>

MODE PIN NO.	EE
IC4001	
1	0
2	0
3	0
4	3.3
5	0
6	0
7	3.3
8	2.3
9	3.3
10	0
11	0
12	0
13	0
14	0
15	0
16	1.3
17	0
18	0
19	3.3
20	3.3
21	3.3
22	1.6
23	0
24	0
25	0
26	0
27	1.7
28	1.5
29	1.2
30	0
31	3.3
32	1.2
33	2.2
34	0.9
35	0
36	0
37	0
38	0
39	1.2
40	0.3
41	0
42	0
43	3.3
44	2
45	0

MODE PIN NO.	EE
46	0
47	0
48	0
IC4002	
1	3.3
2	1.8
3	0
4	2
5	3.3
IC4201	
1	0.3
2	2.4
3	1.1
4	1.9
5	2
6	2.3
7	1.1
8	1.4
9	1.6
10	2.6
11	1.8
12	1.4
13	3.1
14	3.2
15	3.3
16	3.1
17	0
18	0
19	0
20	0
21	0
22	1.8
23	1.8
24	1.7
25	1.7
26	0
27	0
28	0
29	0
30	1.5
31	1.6
32	1.5
33	1.8
34	3.3
35	1.8
36	1.7
37	1.7
38	1.6
39	2.1
40	1.3
41	0.9
42	1.4
43	2
44	2
45	2
46	2
47	1.8
48	1.4
49	0.8
50	1.3
51	0
52	3.3
53	1.7
54	1.1
55	1.7
56	2.1
57	1.7
58	3.3
59	1.3
60	2.2
61	0.6
62	3.3
63	0
64	0
65	0
66	0
67	3.3
68	2

MODE PIN NO.	EE
69	1.6
70	0.2
71	0.1
72	3.1
73	0.1
74	0.1
75	1.8
76	0.3
77	1
78	0.9
79	2
80	1.1
81	1.2
82	1.4
83	1.7
84	1.6
85	0
86	3.3
87	0.8
88	0.8
89	0.3
90	1.6
91	0.1
92	0.1
93	0.3
94	0.1
95	0.7
96	1.1
97	3.3
98	3.3
99	3.3
100	0
IC4202	
1	0.1
2	0.3
3	3.3
4	3.3
5	3.3
6	0
7	0.1
8	0.2
9	1.8
10	0
11	3.3
12	0.3
13	2.4
14	1.1
15	1.9
16	2
17	2.3
18	1.1
19	1.4
20	1.6
21	2.6
22	1.8
23	1.4
24	3.1
25	0
26	3.2
27	3.3
28	3.1
29	1.5
30	1.6
31	1.4
32	1.8
33	0
34	3.3
35	2
36	2
37	2
38	1.9
39	1.9
40	1.3
41	0.9
42	1.3
43	0
44	3.3
45	0

MODE PIN NO.	EE
46	0
47	0
48	0
49	0
50	0
51	0
52	0
53	0
54	0
55	0
56	0
57	0
58	3.3
59	0
60	2
61	3.3
62	2.7
63	3.3
64	0
65	0
66	0
67	2.7
68	0
69	0.1
70	0
71	0
72	1.3
73	0.9
74	1.4
75	0
76	1.8
77	2
78	2
79	2
80	2
81	1.4
82	0.9
83	1.4
84	2.1
85	1.6
86	1.7
87	1.7
88	1.8
89	3.3
90	0
91	1.8
92	1.5
93	1.6
94	1.5
95	1.7
96	1.7
97	1.9
98	1.8
99	0.1
100	0
IC4203	
1	0
2	1.4
3	1.4
4	1.1
5	1.1
6	1.2
7	1.1
8	-0.6
9	0
10	0
11	0
12	0
13	2.7
14	3.2
15	1.6
16	1.8
17	3.2
18	1.8
19	1.8
20	1.5
21	1.5
22	1.6

MODE PIN NO.	EE
23	3.2
24	1.3
25	2.1
26	0
27	1.2
28	1.2
29	3.2
30	0.7
31	1
32	3.2
33	0
34	2.7
35	0
36	0
37	0
38	0.8
39	1
40	0.7
41	1.2
42	1.3
43	1.8
44	1.5
IC4204	
1	3.3
2	0.1
3	0
4	0.1
5	3.3
IC4205	
1	0
2	4.9
3	3.3
IC4206	
1	3.2
2	0
3	1.2
4	4.9
5	6.7
IC4207	
1	0.1
2	0.1
3	0
4	0.1
5	3.3
IC4208	
1	3.2
2	0
3	1.2
4	4.9
5	6.7
IC4401	
1	1.8
2	0
3	0
4	1.8
5	1.8
6	1.8
7	2.9
8	2.9
9	1.5
10	0
11	2.5
12	2.9
13	0.2
14	4.9
15	0
16	0.8
17	3.1
18	0.1
19	1.1
20	1.8
21	1.8
22	0
23	1.8
24	1.8
IC4402	
1	1
2	0

MODE PIN NO.	EE
3	3
4	3
5	2.4
6	4.9
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
Q4001	
E	0.7
C	3.3
B	0
Q4201	
E	2.3
C	0
B	1.7
Q4202	
E	2.3
C	0
B	1.7
Q4203	
E	2.2
C	4.9
B	2.8
Q4204	
E	2.2
C	4.9
B	2.8
Q4205	
E	1.2
C	-7.6
B	0.6
Q4207	
E	2.5
C	4.9
B	3.1
Q4208	
E	2.2
C	3.6
B	2.8
Q4209	
E	3
C	4.9
B	3.6

<CCD>

MODE PIN NO.	EE
IC5001	
1	-7.8
2	-7.
3	-0.4
4	0
5	-0.4
6	3.6
7	0
8	3.3
9	0
10	3.3
11	0
12	3.1
13	3.4
14	3.1
15	0
16	15.3
17	-7.4
18	-7.4
19	0
20	15.3
IC5002	
1	3.1
2	0.7
3	0

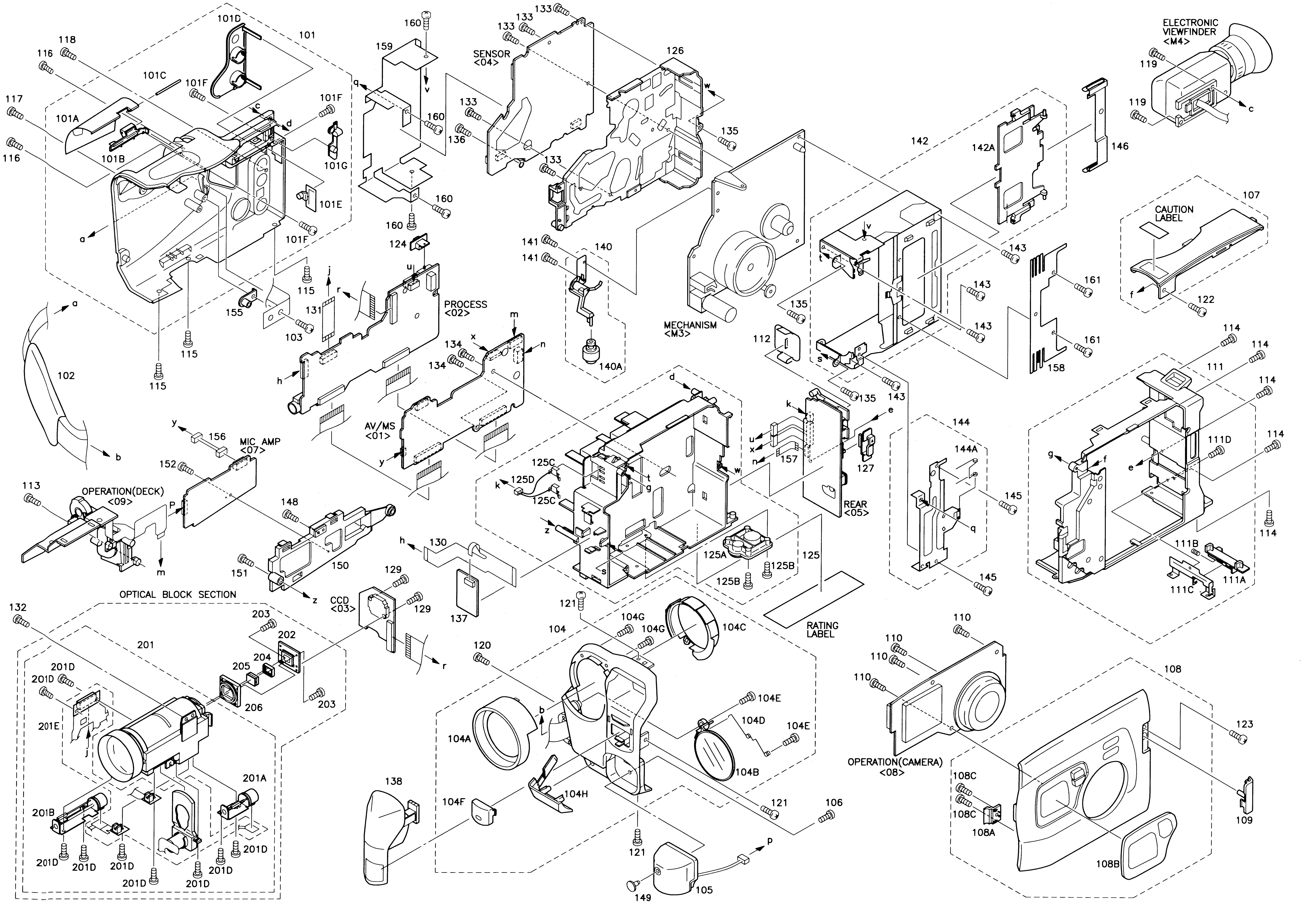
MODE PIN NO.	EE
4	1.6
5	0
6	0
7	0
8	0
9	3.3
10	0
11	-0.7
12	0
13	3.4
14	0.4
15	3.4
16	3.4
17	0
18	0
19	3.1
20	3.1
21	3.3
22	-3.7
23	-
24	3.4
25	3.4
26	-3.6
27	-4.5
28	-4.4
29	0
30	0
31	-4.5
32	3.4
33	-5.8
34	-5.7
35	-6
36	-6
37	0
38	3.3
39	3.3
40	0
41	0
42	0
43	3.3
44	0.6
45	0
46	0
47	3.3
48	3.3
49	-6
50	-6
51	3
52	3
53	3.2
54	3.2
55	0.3
56	3.3
57	0
58	3.3
59	-6.6
60	1.7
61	0.2
62	0
63	0.2
64	3.4
IC5003	
1	0
2	1.9
3	4.9
4	0
5	0.6
6	0
7	0
8	1.9
9	2.2
10	1.9
11	4.8
12	1.9
13	1.3
14	3.4
15	0
16	1.9

MODE PIN NO.	EE
17	1.4
18	0
19	0
20	3.2
21	1.7
22	1.2
23	1.2
24	0
25	0
26	1.9
27	1.7
28	0
29	1.9
30	0
31	0
32	1.9
33	0
34	0
35	1.2
36	0.5
37	1.9
38	0
39	2.6
40	4.9
41	-3
42	-3.3
43	0
44	0
45	0
46	1.6
47	1.6
48	0
Q5002	
E	0.9
C	4.8
B	1.6
Q5003	
1	-
2	-
3	-
4	-
5	-
6	-

<E. VF>

MODE PIN NO.	EE
IC7001	
1	2.1
2	4.7
3	2
4	0
5	0
6	0
7	2
8	4.5
9	4.2
10	0
11	1.9
12	4.4
13	2.7
14	1.8
15	1.8
16	1.6
Q7001	
1	0.5
2	14.7
3	0
Q7002	
E	2.7
C	-25.2
B	2.2
Q7003	
E	-24.6
C	-34.8
B	-25.2

5.2 FINAL ASSEMBLY <M2>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101E
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VIEWFINDER
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142A
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LABEL
OPTICAL BLOCK SECTION
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CCD
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104D
104E
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104B
104F
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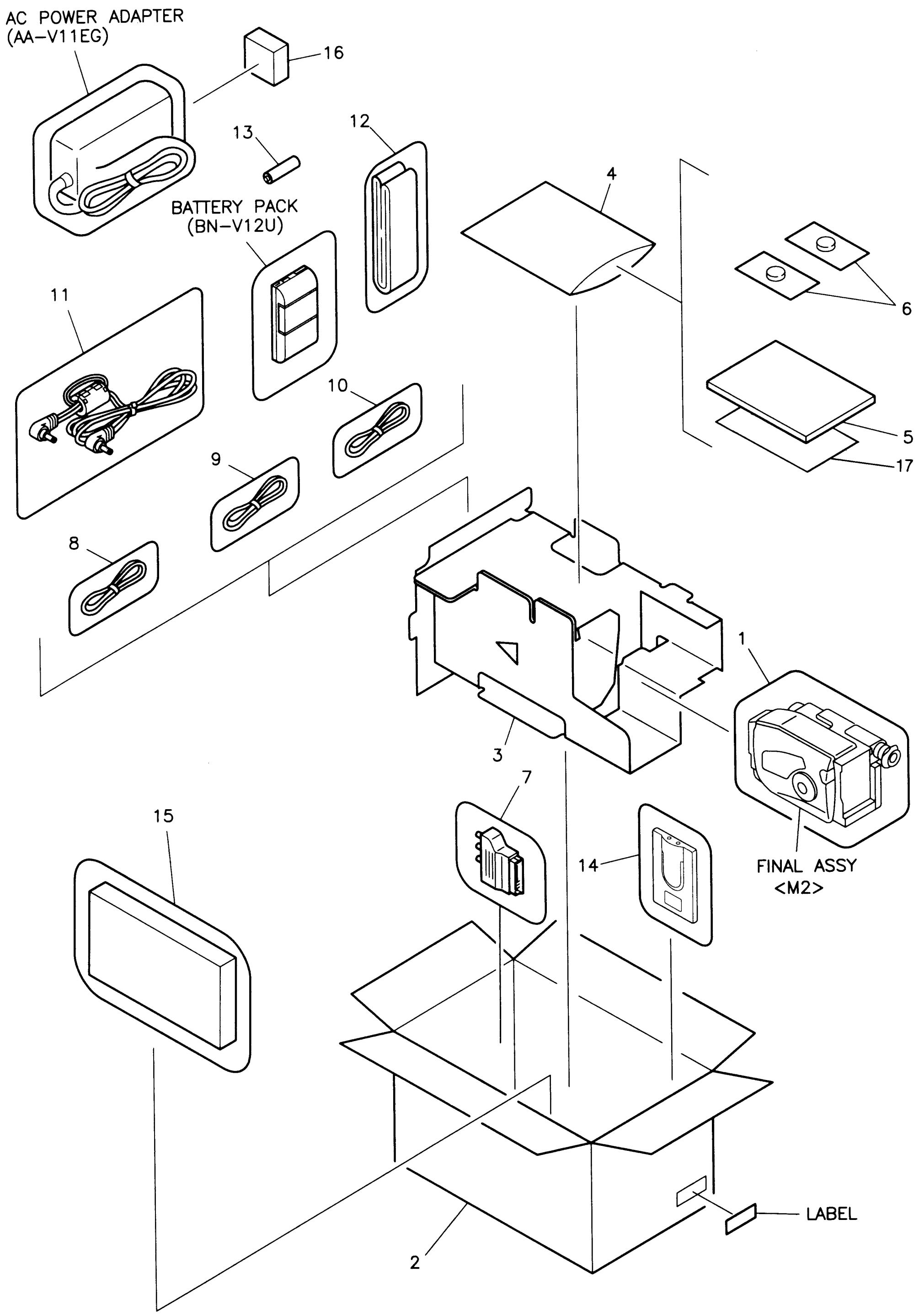
110
108
123
OPERATION(CAMERA)
<08>
108C
108C
108A
108B
109
201A
201B
201D
201D
201D
201D
201D
201D
201D

SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>



#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION

****

PACKING ASSEMBLY <M1>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
		1	LY30023-002A	POLY BAG
		2	LY30285-001A	PACKING CASE,SZ7000EG
			LY30285-002A	PACKING CASE,SZ5000EG
		3	LY30286-001A	CUSHION
		4	QPA02003006	POLY BAG
	⚠	5	LYT0002-0A3A	INSTRUCTIONS(EN,GE),SZ7000EG
	⚠		LYT0002-0A4A	INSTRUCTIONS(FR),SZ7000EG
	⚠		LYT0002-0A5A	INSTRUCTIONS(SP,DU),SZ7000EG
	⚠		LYT0002-0A6A	INSTRUCTIONS(DA,IT),SZ7000EG
	⚠		LYT0002-0A7A	INSTRUCTIONS(SW,FI),SZ7000EG
	⚠		LYT0002-0A8A	INSTRUCTIONS(NO,RU),SZ7000EG
	⚠		LYT0002-0A9A	INSTRUCTIONS(EN,GE),SZ5000EG
	⚠		LYT0002-0B1A	INSTRUCTIONS(FR),SZ5000EG
	⚠		LYT0002-0B2A	INSTRUCTIONS(SP,DU),SZ5000EG
	⚠		LYT0002-0B3A	INSTRUCTIONS(DA,IT),SZ5000EG
	⚠		LYT0002-0B4A	INSTRUCTIONS(SW,FI),SZ5000EG
	⚠		LYT0002-0B5A	INSTRUCTIONS(NO,RU),SZ5000EG
	⚠	6	PECA0903	LI BATTERY,X2
		7	PEMC1000-01-02	CONNECTOR
		8	PEAC0359-150	PIN CORD
		9	PEAC0428-150	CABLE ASSY,EDITING CABLE
		10	QAM0004-003	S CABLE
		11	YS30854A	CABLE ASSY,DC PLUG CORD
		12	YQ10188A-1	S STRAP ASSY
		13	R6PRPA-B	BATTERY
		14	YQ20773Q	REMOTE CONTROLLER,SZ5000EG
			YQ20775C	REMOTE CONTROLLER,SZ7000EG
		15	YQ31963A-3	CASSETTE ADAPTER ASSY
			or YQ31963B-3	CASSETTE ADAPTER ASSY
		16	LY40069-001A	SPACER
		17	LYT0008-028A	SHEET(APS)

- INSTRUCTIONS

EN .... ENGLISH
FR .... FRENCH
GE .... GERMAN
DU .... DUTCH
SP .... SPANISH
IT .... ITALIAN
SW .... SWEDISH
DA .... DANISH
FI .... FINNISH
NO .... NORWEGIAN
RU .... RUSSIAN

* * *

FINAL ASSEMBLY <M2>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	101	LY10004-026D	LOWER CASE ASSY,SZ7000EG
⚠		LY10004-027D	LOWER CASE ASSY,SZ5000EG
	101A	LY30103-002B	COVER/D.OPE,SZ5000EG
		LY30103-004A	COVER/D.OPE,SZ7000EG
	101B	LY30106-001C	GUIDE,SZ5000EG
		LY30106-002A	GUIDE,SZ7000EG
	101C	YQ43795	SHAFT
	101D	LY30125-001A	COVER/JACK
	101E	LY30107-001A	COVER/CONECT
	101F	QYSLSG2040D	SCREW,X3
	101G	LY30199-001A	COVER/L-U
	102	LY20014-001A	GRIP BELT
	103	LY30018-003A	SPECIAL SCREW
	104	LY20017-011D	FORNT COVER ASSY,SZ7000EG
		LY20017-010E	FRONT COVER ASSY,SZ5000EG
	104A	LY30109-001A	HOOD
	104B	LY30110-001A	SHUTTER
	104C	LY30111-001B	KNOB/SHUTTER
	104D	LY40002-001A	TORSION SPRING
	104E	YQ43762	SPECIAL SCREW,X2
	104F	LY30155-001A	IR WINDOW
	104G	QYSLSF2050Z	SCREW,X2
	104H	LY30112-001C	JACK COVER
	105	LY30163-001A	MICROPHONE
	106	QYSLSF2055D	SPECIAL SCREW
	107	LY30164-018B	TOP COVER ASSY,SZ7000EG
		LY30164-019B	TOP COVER ASSY,SZ5000EG
⚠	108	LY20019-013D	CASSETTE COVER ASSY,SZ7000EG
⚠		LY20019-014D	CASSETTE COVER ASSY,SZ5000EG
	108A	LY30115-001B	HINGE
	108B	LY30154-002A	WINDOW
	108C	QYSLSF2050D	SCREW,X2
	109	LY40023-007A	PUSH BUTTON ASSY,SZ7000EG
		LY40023-008A	PUSH BUTTON ASSY,SZ5000EG
	110	QYSLSF2055D	SPECIAL SCREW,X4
⚠	111	LY10032-001A	UPPER CASE ASSY,SZ7000EG
⚠		LY10032-002A	UPPER CASE ASSY,SZ5000EG
	111A	YQ32079	KNOB(B.RELEASE)
	111B	LY30002-001A	COMPRES. SPRING
	111C	LY30165-001A	BKT/B.RELEASE
	111D	QYSLSP2030D	SCREW
	112	YQ30931-1-4	BATTERY COVER
	113	QYSLSF2055D	SPECIAL SCREW
	114	QYSLSF2055D	SPECIAL SCREW,X5
	115	QYSLSF2055D	SPECIAL SCREW,X3
	116	QYSLSF2055D	SPECIAL SCREW,X2
	117	QYSLSF1750D	SCREW
	118	QYSLSF2055D	SPECIAL SCREW
	119	QYSLSG2080D	SCREW,X2
	120	QYSLSF2055D	SPECIAL SCREW
	121	QYSLSF2055D	SPECIAL SCREW,X3
	122	QYSLSF2055D	SPECIAL SCREW
	123	QYSLSP2030D	SCREW
	124	LY40010-001A	KNOB/LIGHT
⚠	125	LY20050-001B	FRAME ASSY
	125A	YQ31843	BASE
	125B	QYSLSF2060D	SCREW,X2
	125C	YQ43810	CONTACT(LIGHT),X2
	125D	ML-Y00786A	LIGHT WIRE
	126	LY10003-001B	BKT/B-B
	127	LY30121-001B	KNOB/EJECT
	129	QYTPSP2006Z	SCREW,X2
	130	QAL0004-001	FPC, CAM OPE - PROC CN203
	131	PEWR0852	FFC, OP-PROC CN201
	132	QYSLSF2055D	SPECIAL SCREW
	133	QYSPSPU1740Z	SCREW,X5
	134	QYSLSF1750D	SCREW,X2
	135	QYSLSF1750D	SCREW,X3
	136	QYSPSPU1720M	SCREW
	137	QAL0023-001	IR SENSOR UNIT
	138	LY20011-002B	DC LIGHT
	140	YQ44027A-7	CLEANER ASSY
	140A	YQ44109A-2	CLEANER ROLLER ASSY
	141	YQ44457-3	SCREW,X2
	142	YQ31752C-19	CASSETTE HOUSING ASSY
	142A	LY20010-001A	C.COVER INSIDE
	143	YQ44457-3	SCREW,X4
	144	YQ32300B-3	FRONT FRAME ASSY
	144A	YQ44144	TAPE GUIDE
	145	SPSH1725M	SCREW,X2
	146	LY30144-001B	SLIDE PLATE
	148	QYSLSG2080D	SCREW
	149	YQ43518	CAP(JACK)
	150	LY20004-001A	HOLDER/S.PWB
	151	QYSLSF2055D	SPECIAL SCREW
	152	QYSLSF2055D	SPECIAL SCREW
	155	LY40078-001A	CAP
	156	ML-Y00785A	MIC-AMP-WIRE
	157	PEWR0860	FFC, AV/MS CM106-REAR CN602
	158	YQ32290	SHIELD COVER
	159	LY30271-001A	SHIELD PLATE
	161	SPSH1720M	SCREW,X2
	160	SPSH1725M	SCREW,X4

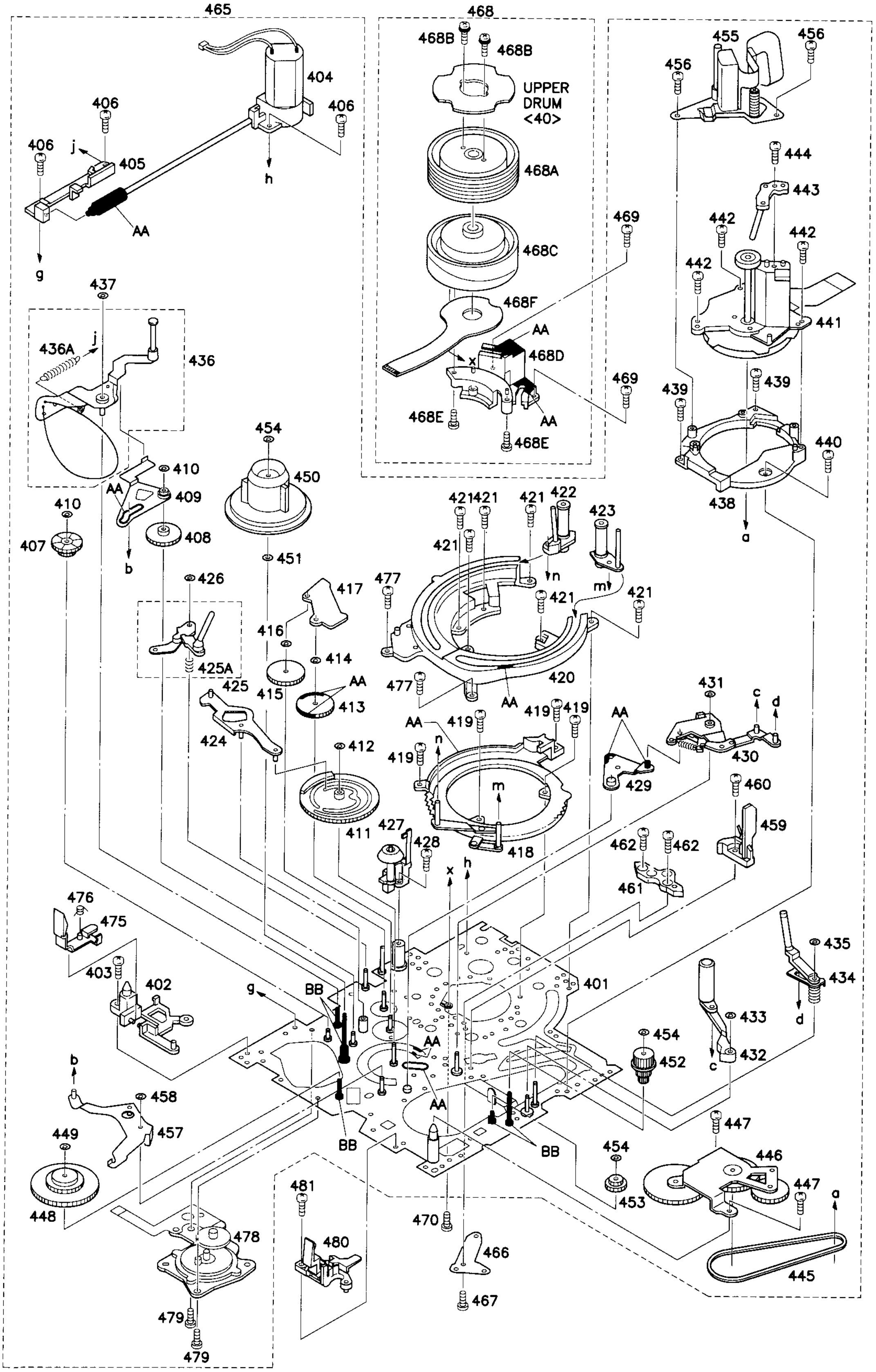
– OPTICAL BLOCK SECTION –

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	201	LY30151-001A	OP BLOCK ASSY
	201A	PTY30151-002	FOCUS MOTOR UNIT
	201B	PTY30151-001	ZOOM MOTOR UNIT
	201D	PTY30151-016	SCREW,X9 M1.7X3.5
	201E	PTY30151-006	IRIS UNIT
	202	YS40113P	CCD BASE ASSY
	203	SPSN2090Z	SCREW,X2
	204	YQ31844	SPACER RUBBER
	205	LY40054-001A	OP LPF
	206	YQ20823	CCD SPACER

5.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



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Classifi-cation	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

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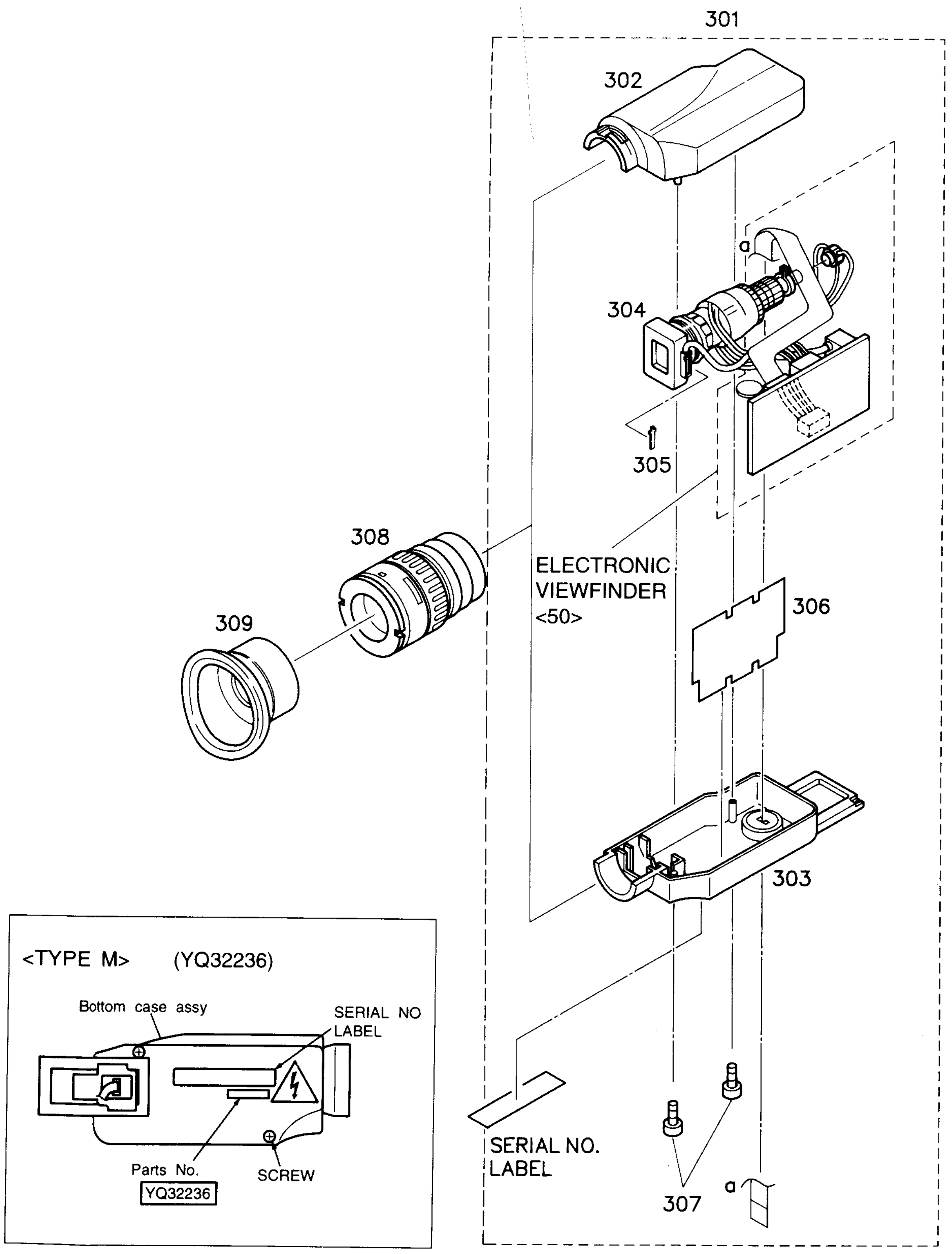
MECHANISM ASSEMBLY <M3>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
401	LY20009-001B	MAIN DECK ASSY
402	YQ32218	CASS.GUIDE(L)
403	YQ44457	SCREW
404	YQ31856A-3	MOTOR BRACKET ASSY
405	YQ20793	WORM BRACKET
406	YQ44457	SCREW,X3
407	YQ31783	WHEEL GEAR
408	YQ44328	MIDDLE GEAR
409	YQ43849B	CANCEL LEVER ASSY
410	PQM30017-27	SLIT WASHER,X2
411	YQ20827-2-1	CONTROL CAM
412	PQM30017-25	SLIT WASHER
413	YQ43853A	LOADING GEAR(T)ASSY
414	PQM30017-27	SLIT WASHER
415	YQ43852A	LOADING GEAR(S)ASSY
416	PQM30017-27	SLIT WASHER
417	YQ43634	COVER PLATE
418	YQ43635C-9	LOADING RING ASSY
419	YQ44457	SCREW,X4
420	YQ10516-1-11	GUIDE RAIL
421	YQ44457-5	SCREW,X6
422	YQ43646A-4	SUPPLY POLE BASE ASSY
423	YQ43654A-11	TAKE-UP POLE BASE ASSY
424	YQ44439A-2	DRIVE LEVER ASSY
425	YQ43663C-7	SLANT ARM ASSY
425A	YQ43670	TOR.SPRING(S)
426	PQM30017-27	SLIT WASHER
427	YQ44436A-3	ROLLER BASE ASSY
428	YQ44457	SCREW
429	YQ32230	LINK LEVER
430	YQ43682B	LINK ARM ASSY
431	PQM30017-25	SLIT WASHER
432	LY40018-001A	PINCH ROLLER ARM ASSY
433	PQM30017-25	SLIT WASHER
434	YQ44591A	TAKE-UP GUIDE ARM ASSY
435	PQM30017-27	SLIT WASHER
436	YQ44199C-7	TENSION ARM ASSY
436A	YQ43848-1-2	TENSION SPRING
437	PQM30017-27	SLIT WASHER
438	YQ20797-1-3	MOTOR BASE
439	YQ44457	SCREW,X2
440	YQ44460	SCREW
441	YU42078-2	CAPSTAN MOTOR
442	YQ44304	TAPPING SCREW,X3
443	YQ43708A-2	SLANT POLE BASE ASSY
444	YQ44304	TAPPING SCREW
445	YQ43710	TIMING BELT
446	YQ43711B-7	CENTER PULLEY UNIT
447	YQ44457-2	SCREW,X2
448	YQ43729A-2	SUPPLY CLUCH ASSY
449	PQM30017-27	SLIT WASHER
450	YQ31861-1-7	REEL DISC
451	Q03093-835	WASHER
452	YQ31787	TAKE-UP GEAR
453	YQ43737	BRAKE SUB GEAR
454	PQM30017-27	SLIT WASHER,X3
455	YQ43738B-11	A/C HEAD UNIT
456	SPSN1750Z	SCREW,X2
457	YQ43743B	EJECT LEVER ASSY
458	PQM30017-27	SLIT WASHER
459	YQ31833-1-1	LED GUIDE
460	YQ44457	SCREW
461	YQ43818	DRUM SPACER
462	YQ44457	SCREW,X2
465	YMA0022A	MECHA(A) ASSY
466	YU42051	BRUSH
467	YQ44457-3	SCREW
468	YDV2081A	DRUM ASSY
468A	LY20053-001A	UPPER DRUM ASSY
468B	YDM4031	SCREW,X2
468C	LY20054-001A	LOWER DRUM ASSY
468D	YDM1003-1-5	CATCHER
468E	SPSH1730M	SCREW,X2
468F	QAL0050-001	FPC
469	YQ44457	SCREW,X2
470	SPSH1740Z	SCREW
475	YQ32219	SW.LEVER(L)
476	YQ44422-1-1	TORSION SPRING
477	SPSH1730C	SCREW,X2
478	QSW0455-001	ROTARY ENCODER
479	LY40079-001A	SCREW,X2
480	YQ44339A-4	CASS.GUIDE(R)ASSY
481	YQ44457	SCREW

5.4 ELECTRONIC VIEWFINDER ASSEMBLY <M4>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302
304
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307
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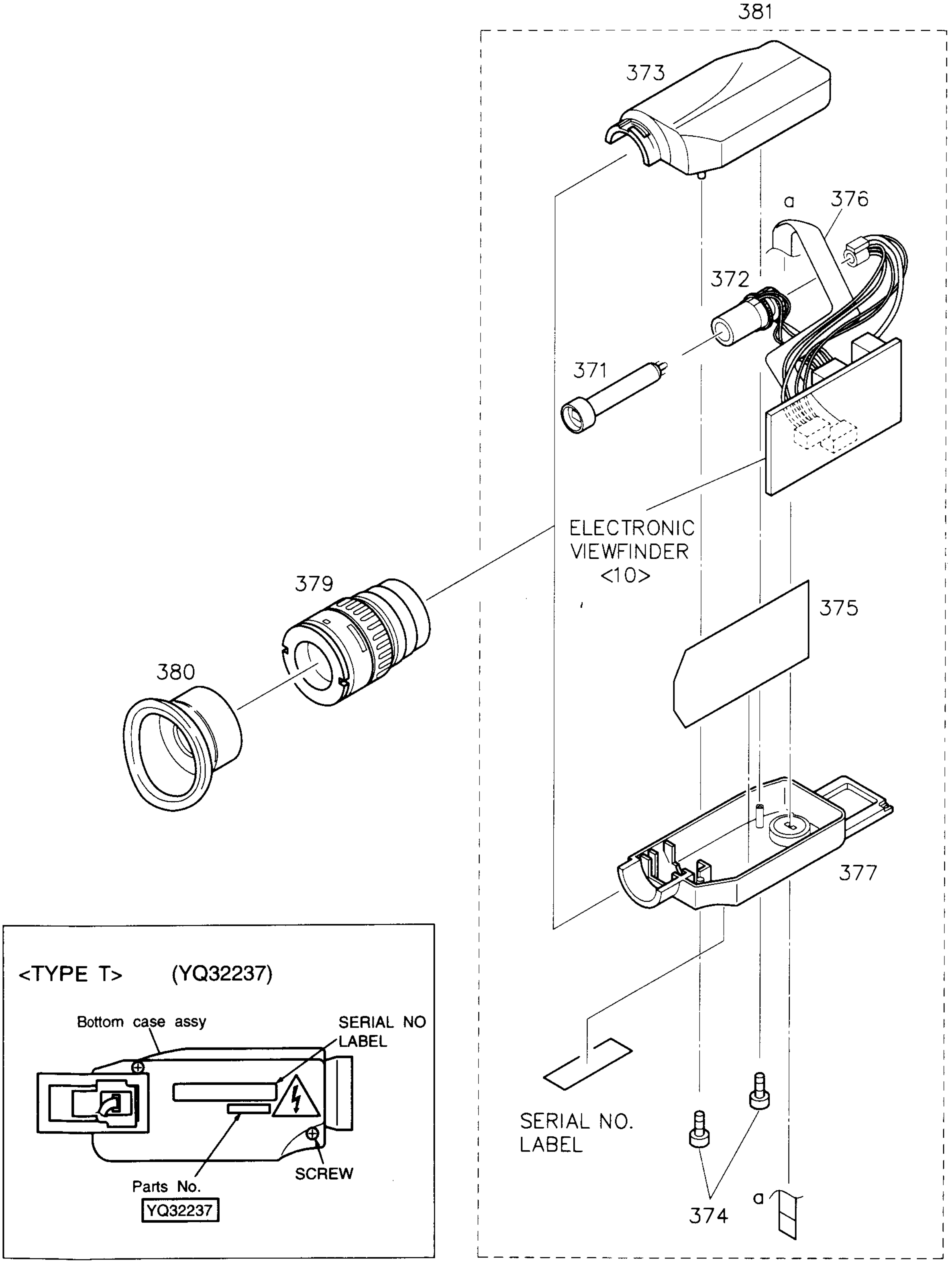
<TYPE M> (YQ32236)
Bottom case assy
SERIAL NO LABEL
Parts No.
YQ32236
SCREW

* *

ELECTRONIC VIEWFINDER ASSEMBLY <M4>

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	⚠	301	YQ32236F	EVF ASSY,SZ5000EG
	⚠		YQ32236G	EVF ASSY,SZ7000EG
	⚠	302	YQ32236-001	TOP CASE,SZ5000EG
	⚠		YQ32236-301	TOP CASE,SZ7000EG
	⚠	303	YQ32236-102	BOTTOM CASE ASSY
	⚠	304	YQ31803-001	CRY/DY ASSY
	⚠	305	YU30181-014	HV COVER
	⚠	306	YQ31803-100	INSULATOR
		307	YU30045-014	SCREW,X2 M1.7X5
		308	YQ31803-200	LENS ASSY
		309	YQ31803-201	EYE CAP

5.5 ELECTRONIC VIEWFINDER ASSEMBLY <M4> [GR-SZ5000EG]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ELECTRONIC VIEWFINDER <10>
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375
380
377
SERIAL NO. LABEL
374
a
<TYPE T> (YQ32237)
Bottom case assy
SERIAL NO LABEL
Parts No.
YQ32237
SCREW

* *

ELECTRONIC VIEWFINDER ASSEMBLY <M4>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 371	PEDP0193	CRT
⚠ 372	PELN1179	DEFLECTION YOKE
⚠ 373	YQ10628-2	TOP CASE
374	SPSN1750M	SCREW,X2
⚠ 375	YQ44473	INSULATOR
376	QAL0007-001	FPC
377	YQ32237-102	BOTTOM CASE ASSY
379	YQ31803-200	LENS ASSY
380	YQ31803-201	EYE CAP
⚠ 381	YQ32237F-1	EVF ASSY

5.6 ELECTRICAL PARTS LIST

* * *

AV/MS BOARD ASSEMBLY <01>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW1	YB10184A1-03	AV/MS BOARD ASSY,SZ7000EG	
	YB10184B1-03	AV/MS BOARD ASSY,SZ5000EG	
IC1001	M37774M3L603GP	IC	
IC1002	TC74HCT7007AF	IC	
IC1003	MC74HC132ADT	IC(DIGITAL)	
IC2101	JCY0040	IC	
IC3001	MM1166XF	IC	
IC3002	JCP0054	IC	
IC3003	TL8850AF	IC	
IC3004	JCY0030-XE	IC	
	or AN3298NSB-WE	IC	
IC3005	M52363VP	IC	
IC3006	MM1024AF	IC	
IC3011	HA118092FP-XE	IC	
Q1001	2SA1774/RS/-X	TRANSISTOR	
Q1002	DTC124EE	TRANSISTOR	
Q1003	DTA124EE	TRANSISTOR	
Q1201	DTC144EE	TRANSISTOR	
	or UN9213	TRANSISTOR	
Q1202	2SC4617/QR/-X	TRANSISTOR	
Q2001	2SC4097/QR/-X	TRANSISTOR	
Q2002	2SA1774/QR/-X	TRANSISTOR	
Q2003	2SA1774/QR/-X	TRANSISTOR	
Q2005	2SC4617/QR/-X	TRANSISTOR	
Q2006	2SC4617/QR/-X	TRANSISTOR	
Q2007	DTC144EE	TRANSISTOR	
Q2008	DTA114EE	TRANSISTOR	
Q2009	UMX1N	TRANSISTOR	
Q2011	2SC4617/QR/-X	TRANSISTOR	
Q2101	2SC4617/QR/-X	TRANSISTOR	
Q2102	2SC4617/QR/-X	TRANSISTOR	
Q2103	DTC114EE	TRANSISTOR	
Q2105	DTC144EE	TRANSISTOR	
Q2106	2SC4617/QR/-X	TRANSISTOR	
Q2107	2SC4617/QR/-X	TRANSISTOR	
Q2108	2SC4617/QR/-X	TRANSISTOR	
Q2109	2SA1774/QR/-X	TRANSISTOR	
Q2110	2SA1774/QR/-X	TRANSISTOR	
Q3006	DTC144EE	TRANSISTOR	
Q3007	DTC144EE	TRANSISTOR	
Q3008	2SA1774/QR/-X	TRANSISTOR	
Q3009	2SA1774/QR/-X	TRANSISTOR	
Q3010	DTC114EE	TRANSISTOR	
Q3011	2SC4617/QR/-X	TRANSISTOR	
Q3012	2SC4617/QR/-X	TRANSISTOR	
Q3013	2SC4617/QR/-X	TRANSISTOR	
Q3014	2SC4617/QR/-X	TRANSISTOR	
Q3015	2SA1774/QR/-X	TRANSISTOR	
Q3016	DTC144EE	TRANSISTOR	
Q3017	DTA144EE	TRANSISTOR	
Q3018	DTC144EE	TRANSISTOR	
Q3019	2SC4617/QR/-X	TRANSISTOR	
Q3020	2SA1774/QR/-X	TRANSISTOR	
Q3021	2SC4617/QR/-X	TRANSISTOR	
Q3022	DTC144EE	TRANSISTOR	
Q3023	2SC4617/QR/-X	TRANSISTOR	
Q3024	2SA1774/QR/-X	TRANSISTOR	
Q3025	UMX1N	TRANSISTOR	
Q3026	2SC4617/QR/-X	TRANSISTOR	
Q3027	DTC144EE	TRANSISTOR	
Q3028	DTC144EE	TRANSISTOR	
Q3029	DTC144EE	TRANSISTOR	
Q3031	UMX1N	TRANSISTOR	
Q3032	2SA1577/QR/-X	TRANSISTOR	
Q3033	2SA1774/QR/-X	TRANSISTOR	
D1002	DAN222	DIODE	
D1003	1SS355	DIODE	
D1004	1SS355	DIODE	
D2101	DAN222	DIODE	
D3001	DAN222	DIODE	
D3002	DAN222	DIODE	
D3006	DAP222	DIODE	
D3007	DAP222	DIODE	
R1002	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R1003	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R1004	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1006	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1007	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1010	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R1011	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R1012	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R1013	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R1014	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R1015	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R1017	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R1025	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1026	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R1027	NRSA63J-122X	MG RESISTOR	1.2kΩ,1/16W
R1028	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1029	NRSA63J-751X	MG RESISTOR	750Ω,1/16W
R1030	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1031	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1032	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1033	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1034	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R1035	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1036	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1037	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R1038	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1047	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1201	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1202	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1203	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1204	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1205	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1207	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R1208	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R1209	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R1210	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R1211	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1212	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1213	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1214	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2001	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2002	NRSA63J-3R3X	MG RESISTOR	3.3Ω,1/16W
R2003	NRVA63D-822X	CMF RESISTOR	8.2kΩ,1/16W
R2006	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2007	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R2008	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2009	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R2013	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2014	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R2016	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R2017	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R2018	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R2021	NRSA63J-752X	MG RESISTOR	7.5kΩ,1/16W
R2023	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2024	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2025	NRSA63J-274X	MG RESISTOR	270kΩ,1/16W
R2026	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R2027	NRSA63J-470X	MG RESISTOR	47Ω,1/16W
R2028	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R2029	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
R2033	NRVA63D-152X	CMF RESISTOR	1.5kΩ,1/16W
R2034	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2035	NRVA63D-113X	CMF RESISTOR	11kΩ,1/16W
R2037	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R2038	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R2039	NRSA63J-271X	MG RESISTOR	270Ω,1/16W
R2042	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R2043	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R2101	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2102	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2103	NRVA63D-511X	CMF RESISTOR	510Ω,1/16W
R2104	NRVA63D-511X	CMF RESISTOR	510Ω,1/16W
R2105	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R2106	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R2107	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R2108	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R2109	NRVA63D-153X	CMF RESISTOR	15kΩ,1/16W
R2110	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
R2111	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R2112	NRSA63J-122X	MG RESISTOR	1.2kΩ,1/16W
R2113	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2114	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2115	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2116	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R2117	NRSA63J-394X	MG RESISTOR	390kΩ,1/16W
R2119	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2120	NRSA63J-394X	MG RESISTOR	390kΩ,1/16W
R2121	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R2122	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R2123	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R2124	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R2125	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R2126	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2127	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2128	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2131	NRSA63J-271X	MG RESISTOR	270Ω,1/16W
R2132	NRSA63J-564X	MG RESISTOR	560kΩ,1/16W
R2133	NRSA63J-564X	MG RESISTOR	560kΩ,1/16W
R2134	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2135	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2136	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R2143	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2144	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2145	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2154	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2155	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R2160	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3007	NRSA63J-225X	MG RESISTOR	2.2MΩ,1/16W
R3010	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3011	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3012	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3013	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3014	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3015	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R3016	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3017	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R3018	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R3019	NRSA63J-224X	MG RESISTOR	220kΩ,1/16W
R3020	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3021	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3022	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3023	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R3024	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3025	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R3026	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R3027	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3033	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3036	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3037	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3038	NRSA63J-122X	MG RESISTOR	1.2kΩ,1/16W
R3039	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3041	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3042	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3043	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R3044	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3045	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R3046	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3047	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3049	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R3051	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3053	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3054	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3055	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R3057	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3058	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R3059	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R3060	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3062	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3063	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3064	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R3065	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3066	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3068	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3069	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3070	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3071	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3072	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R3073	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R3075	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3076	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R3077	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3078	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3079	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3080	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3081	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R3082	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
R3083	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R3084	NRSA63J-912X	MG RESISTOR	9.1kΩ,1/16W
R3085	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3087	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R3088	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R3089	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R3090	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3091	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R3092	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3093	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3094	NRSA63J-910X	MG RESISTOR	91Ω,1/16W
R3095	NRSA63J-122X	MG RESISTOR	1.2kΩ,1/16W
R3096	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3097	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3098	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3099	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3100	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3102	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3103	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3104	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3105	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3106	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3107	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3108	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3109	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3110	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3111	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3112	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R3113	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3114	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3115	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3116	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3117	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R3118	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3119	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3120	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3121	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3122	NRSA63J-132X	MG RESISTOR	1.3kΩ,1/16W
R3123	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3124	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3125	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3126	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R3128	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3129	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3130	NRSA63J-121X	MG RESISTOR	120Ω,1/16W
R3131	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3132	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R3133	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R3134	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3135	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3136	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R3137	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3138	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3139	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3140	NRSA63J-225X	MG RESISTOR	2.2MΩ,1/16W
R3142	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3144	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3145	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3146	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3147	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3148	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3149	NRSA63J-820X	MG RESISTOR	82Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R3150	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3151	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3152	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3153	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3154	NRSA63J-820X	MG RESISTOR	82Ω,1/16W
R3155	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3169	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R3171	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3172	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3173	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R3174	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3175	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R3177	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3178	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
R3179	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
RA1002	NRZ0012-222X	NETWORK RESISTOR	2.2kΩ
RA1003	NRZ0012-103X	NETWORK RESISTOR	10kΩ
RA1004	NRZ0015-222X	NETWORK RESISTOR	2.2kΩ
RA1005	NRZ0015-103X	NETWORK RESISTOR	10kΩ
RA1006	NRZ0012-102X	NETWORK RESISTOR	1kΩ
RA1007	NRZ0015-222X	NETWORK RESISTOR	2.2kΩ
RA1201	NRZ0015-102X	NETWORK RESISTOR	1kΩ
RA1202	NRZ0015-102X	NETWORK RESISTOR	1kΩ
C1001	NDC31HJ-100X	CAPACITOR	10pF,50V
C1002	NDC31HJ-120X	CAPACITOR	12pF,50V
C1005	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1006	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1007	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1008	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1009	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1010	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1011	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1202	NCF21CZ-474X	CAPACITOR	0.47μF,16V
C1204	NCB31CK-333X	CAPACITOR	0.033μF,16V
C1205	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C1206	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1207	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1208	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C1209	NBE21CM-105X	T CAPACITOR	1μF,16V
C1210	NBE21CM-105X	T CAPACITOR	1μF,16V
C1212	NCB31HK-222X	CAPACITOR	0.0022μF,50V
C1213	NCB31CK-473X	CAPACITOR	0.047μF,16V
C1214	NEA71HM-335X	E CAPACITOR	3.3μF,50V
C1215	NDC31HJ-101X	CAPACITOR	100pF,50V
C1216	NBE21CM-105X	T CAPACITOR	1μF,16V
C1218	NBE21AM-225X	T CAPACITOR	2.2μF,10V
C2001	NBE41AM-226X	T CAPACITOR	22μF,10V
C2002	NCB31EK-682X	CAPACITOR	0.0068μF,25V
C2004	NDC31HJ-471X	CAPACITOR	470pF,50V
C2006	NFV41HJ-273X	MPPS CAPACITOR	0.027μF,50V
C2007	NDC31HJ-331X	CAPACITOR	330pF,50V
C2008	NEZ0012-476X	E CAPACITOR	47μF
C2009	NCF21CZ-105X	CAPACITOR	1μF,16V
C2010	NDC31HJ-101X	CAPACITOR	100pF,50V
C2012	NCB21EK-683X	CAPACITOR	0.068μF,25V
C2014	NCB31EK-682X	CAPACITOR	0.0068μF,25V
C2015	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C2016	NCB31HK-102X	CAPACITOR	0.001μF,50V
C2019	NCB31HK-681X	CAPACITOR	680pF,50V
C2020	NBE21CM-105X	T CAPACITOR	1μF,16V
C2022	NCB31EK-103X	CAPACITOR	0.01μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C2023	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2028	NCF21CZ-105X	CAPACITOR	1μF,16V
C2029	NCB31EK-223X	CAPACITOR	0.022μF,25V
C2101	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2102	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2103	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C2104	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C2105	NCB31CK-473X	CAPACITOR	0.047μF,16V
C2106	NCB31CK-473X	CAPACITOR	0.047μF,16V
C2107	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C2108	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C2109	NEA70GM-476X	E CAPACITOR	47μF,4.0V
C2110	NEA70GM-476X	E CAPACITOR	47μF,4.0V
C2111	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2112	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2113	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2114	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2115	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2116	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2117	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2118	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2120	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C2121	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C2122	NEA70GM-476X	E CAPACITOR	47μF,4.0V
C2123	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C2125	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2127	NDC31HJ-470X	CAPACITOR	47pF,50V
C2128	NDC31HJ-221X	CAPACITOR	220pF,50V
C2129	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C2130	NCB21CK-224X	CAPACITOR	0.22μF,16V
C2132	NEAB0JM-107X	E CAPACITOR	100μF,6.3V
C2133	NBE41AM-106X	T CAPACITOR	10μF,10V
C2134	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2135	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2137	NBE21CM-105X	T CAPACITOR	1μF,16V
C2138	NCB11CK-105X	CAPACITOR	1μF,16V
C2139	NCB11CK-105X	CAPACITOR	1μF,16V
C2142	NBE21CM-105X	T CAPACITOR	1μF,16V
C2144	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C2149	NCB31HK-222X	CAPACITOR	0.0022μF,50V
C3002	NEA71HM-225X	E CAPACITOR	2.2μF,50V
C3003	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3005	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3006	NCB21AK-105X	CAPACITOR	1μF,10V
C3007	NCB31EK-153X	CAPACITOR	0.015μF,25V
C3008	NEA71EM-475X	E CAPACITOR	4.7μF,25V
C3009	NCB21CK-474X	CAPACITOR	0.47μF,16V
C3010	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3011	NEA71HM-225X	E CAPACITOR	2.2μF,50V
C3012	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3013	NEA71CM-106X	E CAPACITOR	10μF,16V
C3014	NDC31HJ-2R0X	CAPACITOR	2pF,50V
C3015	NDC31HJ-330X	CAPACITOR	33pF,50V
C3017	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3018	NCB21AK-105X	CAPACITOR	1μF,10V
C3020	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3021	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3022	NCB21CK-474X	CAPACITOR	0.47μF,16V
C3023	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3024	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3025	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3026	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3027	NCF21AZ-225X	CAPACITOR	2.2μF,10V
C3028	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3029	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3030	NEA71CM-106X	E CAPACITOR	10μF,16V
C3031	NCF21EZ-104X	CAPACITOR	0.1μF,25V
C3032	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3034	NEA71CM-106X	E CAPACITOR	10μF,16V
C3035	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3036	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3037	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3038	NEA71CM-106X	E CAPACITOR	10μF,16V
C3039	NEA71CM-106X	E CAPACITOR	10μF,16V
C3040	NEA71CM-106X	E CAPACITOR	10μF,16V
C3041	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3042	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3043	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3044	NCB21AK-105X	CAPACITOR	1μF,10V
C3045	NCB21CK-474X	CAPACITOR	0.47μF,16V
C3046	NCB21AK-105X	CAPACITOR	1μF,10V
C3047	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3048	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3049	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3050	NDC31HJ-471X	CAPACITOR	470pF,50V
C3051	NDC31HJ-180X	CAPACITOR	18pF,50V
C3052	NDC31HJ-470X	CAPACITOR	47pF,50V
C3053	NDC31HJ-151X	CAPACITOR	150pF,50V
C3054	NDC31HJ-100X	CAPACITOR	10pF,50V
C3055	NCB31EK-223X	CAPACITOR	0.022μF,25V
C3056	NEAB0JM-107X	E CAPACITOR	100μF,6.3V
C3057	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3058	NCB31AK-224X	CAPACITOR	0.22μF,10V
C3059	NDC31HJ-680X	CAPACITOR	68pF,50V
C3060	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3061	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C3062	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3063	NCB31AK-224X	CAPACITOR	0.22μF,10V
C3064	NDC31HJ-391X	CAPACITOR	390pF,50V
C3065	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3067	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3068	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C3069	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3070	NCB21AK-105X	CAPACITOR	1μF,10V
C3071	NBE41AM-226X	T CAPACITOR	22μF,10V
C3072	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3073	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3074	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3075	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3076	NBE21CM-105X	T CAPACITOR	1μF,16V
C3077	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3078	NDC31HJ-101X	CAPACITOR	100pF,50V
C3080	NDC31HJ-330X	CAPACITOR	33pF,50V
C3081	NDC31HJ-100X	CAPACITOR	10pF,50V
C3082	NDC31HJ-330X	CAPACITOR	33pF,50V
C3085	NDC31HJ-151X	CAPACITOR	150pF,50V
C3086	NDC31HJ-820X	CAPACITOR	82pF,50V
C3088	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3089	NBE41AM-226X	T CAPACITOR	22μF,10V
C3090	NCB21AK-105X	CAPACITOR	1μF,10V
C3091	NCB21AK-105X	CAPACITOR	1μF,10V
C3092	NCB31CK-104X	CAPACITOR	0.1μF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3096	NDC31HJ-221X	CAPACITOR	220pF,50V
C3097	NDC31HJ-470X	CAPACITOR	47pF,50V
C3098	NDC31HJ-680X	CAPACITOR	68pF,50V
C3099	NDC31HJ-150X	CAPACITOR	15pF,50V
C3100	NDC31HJ-221X	CAPACITOR	220pF,50V
C3101	NDC31HJ-470X	CAPACITOR	47pF,50V
C3102	NEA71EM-475X	E CAPACITOR	4.7μF,25V
C3103	NDC31HJ-680X	CAPACITOR	68pF,50V
C3104	NDC31HJ-390X	CAPACITOR	39pF,50V
C3105	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3106	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3107	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3108	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3109	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3110	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3111	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3112	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3113	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3114	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C3115	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3116	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3117	NDC31HJ-120X	CAPACITOR	12pF,50V
C3118	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3119	NDC31HJ-181X	CAPACITOR	180pF,50V
C3120	NDC31HJ-220X	CAPACITOR	22pF,50V
C3121	NCB31HK-222X	CAPACITOR	0.0022μF,50V
C3122	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3123	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C3124	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3125	NDC31HJ-330X	CAPACITOR	33pF,50V
C3126	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3127	NDC31HJ-680X	CAPACITOR	68pF,50V
C3128	NDC31HJ-101X	CAPACITOR	100pF,50V
C3129	NDC31HJ-270X	CAPACITOR	27pF,50V
C3130	NDC31HJ-221X	CAPACITOR	220pF,50V
C3131	NDC31HJ-331X	CAPACITOR	330pF,50V
C3132	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3133	NDC31HJ-3R0X	CAPACITOR	3pF,50V
C3135	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3136	NDC31HJ-220X	CAPACITOR	22pF,50V
C3137	NDC31HJ-680X	CAPACITOR	68pF,50V
C3138	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3139	NDC31HJ-680X	CAPACITOR	68pF,50V
C3140	NDC31HJ-150X	CAPACITOR	15pF,50V
C3141	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3142	NCB31EK-223X	CAPACITOR	0.022μF,25V
C3143	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3144	NCB31HK-681X	CAPACITOR	680pF,50V
C3145	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3148	NDC31HJ-331X	CAPACITOR	330pF,50V
C3149	NDC31HJ-221X	CAPACITOR	220pF,50V
C3150	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3151	NEA71HM-225X	E CAPACITOR	2.2μF,50V
C3153	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3154	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3155	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C3156	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3158	NCB21AK-105X	CAPACITOR	1μF,10V
C3171	NDC31HJ-101X	CAPACITOR	100pF,50V
C3172	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3173	NCB31EK-103X	CAPACITOR	0.01μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3174	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C3175	NEA70JM-226X	E CAPACITOR	22μF,6.3V
C3176	NCB31EK-223X	CAPACITOR	0.022μF,25V
C3177	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3178	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3179	NEA71CM-106X	E CAPACITOR	10μF,16V
C3180	NEA71CM-106X	E CAPACITOR	10μF,16V
C3181	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3182	NCB31EK-103X	CAPACITOR	0.01μF,25V
L2001	NQL144K-470X	COIL	47μH
L2002	NQL144K-470X	COIL	47μH
L2103	NQL144K-470X	COIL	47μH
L3002	NQL184J-820X	COIL	82μH
L3003	NQL144K-470X	COIL	47μH
L3004	NQL144K-470X	COIL	47μH
L3005	NQL184J-150X	COIL	15μH
L3006	NQL144K-470X	COIL	47μH
L3007	NQL144K-470X	COIL	47μH
L3009	NQL184J-100X	COIL	10μH
L3010	NQL184J-120X	COIL	12μH
L3011	NQL184J-220X	COIL	22μH
L3012	NQL184J-390X	COIL	39μH
L3014	NQL184J-120X	COIL	12μH
L3015	NQL184J-150X	COIL	15μH
L3016	NQL144K-470X	COIL	47μH
L3017	NQL184J-220X	COIL	22μH
L3018	NQL184J-100X	COIL	10μH
L3019	NQL184J-270X	COIL	27μH
L3020	NQL144K-470X	COIL	47μH
L3021	NQL184J-560X	COIL	56μH
L3022	NQL184K-5R6X	COIL	5.6μH
L3023	NQL184J-121X	COIL	120μH
L3024	NQL184J-820X	COIL	82μH
L3025	PU57620-821J	COIL	820μH
L3026	PU57620-102J	COIL	1mH
L3027	NQL184J-331X	COIL	330μH
L3030	NQL144K-470X	COIL	47μH
L3041	NQL144K-470X	COIL	47μH
X1001	QAX0009-001	CRYSTAL RESONATOR	
X3001	PEVB0550	CRYSTAL RESONATOR	
FL3001	NQR0214-001X	LC TRAP	
FL3002	PELN1015-Z	EQUALIZER	
T2001	NQR0002-001X	BIAS COIL	
CN101	PEMC1220-064-R	CONNECTOR	
CN102	PEWR0836	LEAD BUS CONN	
CN103	PEWR0836	LEAD BUS CONN	
CN104	PEMC1073-007-R	CONNECTOR	
CN105	QGF0502F1-13X	FPC CONNE	
CN106	QGF0503C1-08X	FPC CONNE	
CN107	QGF0502F1-11X	FPC CONNE	
CN108	YU41356-5-R	CONNECTOR	

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PROCESS BOARD ASSEMBLY <02>

PW2	YB10184A2-03	PROCESS BOARD ASSY,SZ7000EG
	YB10184B2-03	PROCESS BOARD ASSY,SZ5000EG
IC51	MM1117XF	IC
IC101	MN1021213JZL	IC

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	IC102	UPD6461GS-916-X	IC,SZ5000EG	
		or UPD6461GS-909-X	IC,SZ5000EG	
	IC103	RS5C314	IC	
	IC104	AT25040N-10SC-X	IC	
		or NM25C040LZEM8	IC	
		or X25040S-2.7-X	IC	
	IC106	TC7S04FU	IC	
	IC107	PST9129N	IC	
	IC108	TC7S08F	IC(DIGITAL)	
	IC109	MC74HC08ADT	IC(DIGITAL)	
	IC110	MB88344BLPFV	IC	
	IC111	XC62AP3302P	IC	
	IC4001	MN65761T	IC	
	IC4002	TC7SH08FU	IC(DIGITAL)	
	IC4201	JCY0062	IC	
	IC4202	JCY0046	IC	
	IC4203	MSM548332	IC,SZ7000EG	
	IC4204	TC7SH08FU	IC(DIGITAL)	
	IC4205	RH5RL33AA-XE	IC	
	IC4206	MM1320AN	IC	
	IC4207	TC7SH08FU	IC(DIGITAL)	
	IC4208	MM1320AN	IC	
	IC4401	AN2458SH	IC	
	IC4402	EHDGA1489	PWB MODULE	
	IC4801	TB6504F	IC	
	IC4802	TB6504F	IC	
	IC4803	TC74HCT7007AF	IC	
	IC4901	NJM3414AV	IC	
	IC4902	BA10324AF	IC	
	IC4903	TC7S08F	IC(DIGITAL)	
	IC4904	MM1320AN	IC	
	Q102	2SC4617/QR/-X	TRANSISTOR	
	Q103	2SA1774/RS/-X	TRANSISTOR	
	Q104	DTC144EE	TRANSISTOR	
	Q106	DTA114EE	TRANSISTOR	
	Q107	DTC144EE	TRANSISTOR	
	Q108	DTC144EE	TRANSISTOR	
	Q4001	2SC4738/Y/-X	TRANSISTOR	
	Q4201	2SA1832/Y/-X	TRANSISTOR	
	Q4202	2SA1832/Y/-X	TRANSISTOR	
	Q4203	2SC4738/Y/-X	TRANSISTOR	
	Q4204	2SC4738/Y/-X	TRANSISTOR	
	Q4205	2SA1832/Y/-X	TRANSISTOR	
	Q4207	2SC4738/Y/-X	TRANSISTOR	
	Q4208	2SC4738/Y/-X	TRANSISTOR	
	Q4209	2SC4738/Y/-X	TRANSISTOR	
	Q4401	XP4601	TRANSISTOR	
	Q4402	2SC4738/Y/-X	TRANSISTOR	
	Q4801	DTC143ZE	TRANSISTOR	
	Q4802	DTC143ZE	TRANSISTOR	
	Q4901	2SC4617/QR/-X	TRANSISTOR	
	Q4902	2SC4617/QR/-X	TRANSISTOR	
	Q4903	2SC4617/QR/-X	TRANSISTOR	
	Q4904	2SC4617/QR/-X	TRANSISTOR	
	Q4905	DTC144EE	TRANSISTOR	
	Q4906	2SB1218A/QR/-X	TRANSISTOR	
	D41	MA8068	ZENER DIODE	
	D51	DAN222	DIODE	
	D101	RD6.8M/B1/-X	ZENER DIODE	
⚠	D102	MA704WK	SB DIODE	
	R41	NRSA02J-680X	MG RESISTOR	68Ω,1/10W

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	R43	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R44	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R45	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
	R46	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
	R47	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R51	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
	R52	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R53	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
	R54	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
	R101	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
	R102	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R103	NRVA63D-153X	CMF RESISTOR	15kΩ,1/16W
	R104	NRVA63D-303X	CMF RESISTOR	30kΩ,1/16W
	R105	NRVA63D-333X	CMF RESISTOR	33kΩ,1/16W
	R106	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
	R108	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
	R109	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
	R110	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R113	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R114	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R115	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
	R116	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R117	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R118	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R119	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R120	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R121	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R122	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R123	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
	R124	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
	R125	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
	R126	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R127	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R128	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R129	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R130	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R132	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R133	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R136	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R137	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
	R138	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R139	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R140	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R141	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
	R142	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
	R143	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
	R144	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
	R145	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R146	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
	R147	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
	R148	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R149	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R150	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R151	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R152	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R153	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R154	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R155	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R156	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
	R157	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
	R158	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R159	NRSA63J-124X	MG RESISTOR	120kΩ,1/16W
R160	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R161	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R162	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R163	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R164	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R165	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R166	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R167	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R168	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R172	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R175	NRVA63D-163X	CMF RESISTOR	16kΩ,1/16W
R176	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2191	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R2192	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4001	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4002	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4003	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4008	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4009	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R4202	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4203	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4204	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4205	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4206	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4207	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R4209	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4210	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4211	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R4214	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R4215	NRSA63J-242X	MG RESISTOR	2.4kΩ,1/16W
R4217	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R4219	NRVA63D-112X	CMF RESISTOR	1.1kΩ,1/16W
R4221	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4223	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R4226	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R4227	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4228	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R4232	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4234	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4235	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R4237	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4238	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4239	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R4240	NRSA63J-112X	MG RESISTOR	1.1kΩ,1/16W
R4241	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4242	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4243	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4244	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4245	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4401	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4402	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R4403	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R4405	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4406	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R4407	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R4408	NRSA63J-203X	MG RESISTOR	20kΩ,1/16W
R4409	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4410	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4411	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4414	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R4415	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R4417	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4419	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4421	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R4422	NRSA63J-203X	MG RESISTOR	20kΩ,1/16W
R4423	NRSA63J-242X	MG RESISTOR	2.4kΩ,1/16W
R4424	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R4425	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
R4426	NRVA63D-682X	CMF RESISTOR	6.8kΩ,1/16W
R4427	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R4428	NRSA63J-202X	MG RESISTOR	2kΩ,1/16W
R4429	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4430	NRSA63J-202X	MG RESISTOR	2kΩ,1/16W
R4431	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R4801	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R4802	NRSA63J-4R3X	MG RESISTOR	4.3Ω,1/16W
R4803	NRSA63J-4R3X	MG RESISTOR	4.3Ω,1/16W
R4804	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R4805	NRSA63J-5R1X	MG RESISTOR	5.1Ω,1/16W
R4806	NRSA63J-5R1X	MG RESISTOR	5.1Ω,1/16W
R4807	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4808	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4809	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4810	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4811	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4812	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R4813	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R4814	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R4815	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R4816	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R4817	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R4901	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4902	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R4903	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4905	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R4907	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
R4908	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R4909	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R4911	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R4912	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R4913	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R4914	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4915	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R4916	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4917	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4918	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R4919	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4920	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4921	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R4922	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R4923	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4924	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R4925	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R4926	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4927	NRSA63J-334X	MG RESISTOR	330kΩ,1/16W
R4928	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R4929	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4930	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R4931	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R4932	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R4933	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
RA4001	NRZ0015-102X	NETWORK RESISTOR	1kΩ
RA4002	NRZ0015-102X	NETWORK RESISTOR	1kΩ
RA4201	NRZ0015-102X	NETWORK RESISTOR,SZ5000EG	1kΩ
RA4202	NRZ0015-102X	NETWORK RESISTOR,SZ5000EG	1kΩ
RA4203	NRZ0015-102X	NETWORK RESISTOR,SZ5000EG	1kΩ
RA4204	NRZ0015-0R0X	NETWORK RESISTOR,SZ7000EG	0Ω
RA4205	NRZ0015-0R0X	NETWORK RESISTOR,SZ7000EG	0Ω
RA4206	NRZ0015-0R0X	NETWORK RESISTOR,SZ7000EG	0Ω
RA4207	NRZ0015-0R0X	NETWORK RESISTOR,SZ7000EG	0Ω
RA4208	NRZ0015-0R0X	NETWORK RESISTOR,SZ7000EG	0Ω
RA4209	NRZ0015-0R0X	NETWORK RESISTOR,SZ7000EG	0Ω
C41	NEA50GM-337X	E CAPACITOR	330µF,4.0V
C43	NEA50GM-337X	E CAPACITOR	330µF,4.0V
C44	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C51	NEA70JM-226X	E CAPACITOR	22µF,6.3V
C52	NCB31EK-103X	CAPACITOR	0.01µF,25V
C53	NEA71HM-105X	E CAPACITOR	1µF,50V
C101	NCB31EK-103X	CAPACITOR	0.01µF,25V
C102	NBE40JM-226X	T CAPACITOR	22µF,6.3V
C103	NDC31HJ-180X	CAPACITOR	18pF,50V
C104	NCB31CK-104X	CAPACITOR	0.1µF,16V
C105	NCB31EK-103X	CAPACITOR	0.01µF,25V
C108	NCB31EK-103X	CAPACITOR	0.01µF,25V
C109	NDC31HJ-101X	CAPACITOR	100pF,50V
C110	NDC31HJ-101X	CAPACITOR	100pF,50V
C111	NCB31EK-103X	CAPACITOR	0.01µF,25V
C112	NCB31EK-103X	CAPACITOR	0.01µF,25V
C113	NDC31HJ-121X	CAPACITOR	120pF,50V
C115	NDC31HJ-151X	CAPACITOR	150pF,50V
C116	NCB31HK-472X	CAPACITOR	0.0047µF,50V
C117	NCB31HK-102X	CAPACITOR	0.001µF,50V
C118	NCB31HK-102X	CAPACITOR	0.001µF,50V
C119	NCB31HK-102X	CAPACITOR	0.001µF,50V
C120	NCB31HK-102X	CAPACITOR	0.001µF,50V
C121	NCB31EK-103X	CAPACITOR	0.01µF,25V
C122	NCB31EK-103X	CAPACITOR	0.01µF,25V
C123	NCB31EK-103X	CAPACITOR	0.01µF,25V
C124	NCB31EK-103X	CAPACITOR	0.01µF,25V
C125	NCB31HK-102X	CAPACITOR	0.001µF,50V
C126	NCB31HK-102X	CAPACITOR	0.001µF,50V
C127	NCB31HK-102X	CAPACITOR	0.001µF,50V
C128	NCB31HK-102X	CAPACITOR	0.001µF,50V
C130	NEA71CM-106X	E CAPACITOR	10µF,16V
C131	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2193	NCB31HK-102X	CAPACITOR	0.001µF,50V
C2194	NCB31HK-102X	CAPACITOR	0.001µF,50V
C4001	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C4002	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4003	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4004	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C4005	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4006	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4007	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4008	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4009	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4010	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4011	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4012	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4013	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4014	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4015	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4201	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4202	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4203	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C4204	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4205	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4206	NCB11CK-105X	CAPACITOR	1µF,16V
C4207	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4208	NCB21AK-105X	CAPACITOR	1µF,10V
C4209	NCB11CK-105X	CAPACITOR	1µF,16V
C4210	NCB11CK-105X	CAPACITOR	1µF,16V
C4211	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4212	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4213	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4214	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4215	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4216	NCB21CK-474X	CAPACITOR	0.47µF,16V
C4217	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4218	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4219	NBE21EM-474X	T CAPACITOR	0.47µF,25V
C4220	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4222	NBE21EM-105X	T CAPACITOR	1µF,25V
C4223	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4224	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C4225	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4226	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C4230	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4231	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C4232	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4234	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4236	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4237	NDC31HJ-101X	CAPACITOR	100pF,50V
C4238	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4239	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4240	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4241	NBE21EM-105X	T CAPACITOR	1µF,25V
C4242	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4243	NDC31HJ-101X	CAPACITOR	100pF,50V
C4244	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4245	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4401	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4402	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4403	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4404	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4405	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4406	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4407	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4408	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4409	NDC31HJ-101X	CAPACITOR	100pF,50V
C4410	NDC31HJ-101X	CAPACITOR	100pF,50V
C4411	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4412	NCB31CK-473X	CAPACITOR	0.047µF,16V
C4413	NDC31HJ-100X	CAPACITOR	10pF,50V
C4414	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4415	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4416	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4417	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C4418	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4419	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4420	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4421	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C4422	NCB31EK-103X	CAPACITOR	0.01µF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C4801	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4802	NBE41CM-106X	T CAPACITOR	10μF,16V
C4805	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C4806	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C4808	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C4811	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C4812	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C4814	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C4815	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4816	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4817	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4901	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4902	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4903	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4905	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4907	NCB21EK-104X	CAPACITOR	0.1μF,25V
C4908	NCB21EK-104X	CAPACITOR	0.1μF,25V
C4910	NCF21CZ-105X	CAPACITOR	1μF,16V
C4911	NCF21CZ-105X	CAPACITOR	1μF,16V
C4913	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4914	NCB31EK-103X	CAPACITOR	0.01μF,25V
C4915	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C4916	NBE21EM-105X	T CAPACITOR	1μF,25V
L51	NQL144K-470X	COIL	47μH
L101	NQLZ001-8R2X	COIL	47μH
L102	NQL164K-220X	COIL	47μH
L2191	NQL184M-1R0X	COIL	1μH
L2192	NQL184M-1R0X	COIL	1μH
L2193	NQL184M-1R0X	COIL	1μH
L2194	NQL184M-1R0X	COIL	1μH
L4001	NQL144K-101X	COIL	100μH
L4002	NQL144K-101X	COIL	100μH
L4201	NQL144K-101X	COIL	100μH
L4202	NQL144K-101X	COIL	100μH
L4203	NQL144K-101X	COIL	100μH
L4204	NQL144K-101X	COIL	100μH
L4401	NQL144K-101X	COIL	100μH
L4801	NQL164K-220X	COIL	22μH
L4802	NQL144K-101X	COIL	100μH
L4803	NQL144K-101X	COIL	100μH
L4901	NQL164K-470X	COIL	47μH
X101	NAX0006-001X	C OSCILLATOR	
X102	QAX0008-001	CRYSTAL RESONATOR	
FL4201	NQR0164-001X	LOW PASS FILTER	
FL4202	NQR0163-001X	EQUALIZER	
FL4401	NQR0019-001X	BAND PASS FILTER	
SW41	NSW0038-001X	SLIDE SWITCH	
J41	PEMC1203	MINI JACK	
J42	PEMC1188-02	JACK BOARD	
J43	QND0001-001	S JACK	
CN201	QGF0502F1-22X	FPC CONNE	
CN202	PEWR0835	LEAD BUS CONN	
CN203	QGF0502F1-22X	FPC CONNE	
CN204	PEMC1209-007-R	CONNECTOR	
CN206	PEMC1216-011-R	CONNECTOR	
CN207	QGB0801K1-30X	CONNECTOR	

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	

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CCD BOARD ASSEMBLY <03>

PW3	YB10184A3-03	CCD BOARD ASSY	
IC5001	UPD16510GR	IC	
IC5002	JCY0073	IC	
IC5003	NN2037FAQ	IC	
Q5001	2SC4181	TRANSISTOR	
Q5002	2SC4655/BC/-X	TRANSISTOR	
Q5003	XP5601	TRANSISTOR	
D5001	1SS355	DIODE	
D5002	1SS355	DIODE	
R5001	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R5002	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R5003	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R5004	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R5005	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
R5006	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R5008	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5009	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5010	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5011	NRSA63J-220X	MG RESISTOR	22Ω,1/16W
R5012	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5013	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R5015	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R5016	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R5017	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5019	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5021	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5022	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5023	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R5024	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5025	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5026	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5027	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R5028	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R5029	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R5030	NRSA63J-150X	MG RESISTOR	15Ω,1/16W
R5032	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5033	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5034	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5035	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5036	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R5037	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5038	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5039	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5040	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R5041	NRSA63J-220X	MG RESISTOR	22Ω,1/16W
C5001	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5002	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5003	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5004	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5005	NBE21EM-105X	T CAPACITOR	1μF,25V
C5006	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5007	NCB31HK-152X	CAPACITOR	0.0015μF,50V
C5008	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5009	NCB31EK-103X	CAPACITOR	0.01μF,25V
C5010	NBE41VM-105X	T CAPACITOR	1μF,35V
C5011	NCB21EK-104X	CAPACITOR	0.1μF,25V
C5012	NCB31EK-103X	CAPACITOR	0.01μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C5013	NCB21EK-104X	CAPACITOR	0.1µF,25V
C5014	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5015	NBE21EM-105X	T CAPACITOR	1µF,25V
C5016	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5017	NBE21AM-335X	T CAPACITOR	3.3µF,10V
C5020	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5021	NCB21AK-105X	CAPACITOR	1µF,10V
C5024	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5025	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5026	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5027	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5028	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C5029	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5030	NCB21AK-105X	CAPACITOR	1µF,10V
C5031	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5032	NBE21CM-105X	T CAPACITOR	1µF,16V
C5033	NDC31HJ-510X	CAPACITOR	51pF,50V
C5034	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5035	NBE40GM-336X	T CAPACITOR	33µF,4.0V
C5036	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5037	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5038	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C5039	NCB31CK-473X	CAPACITOR	0.047µF,16V
C5040	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5041	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5042	NCB31CK-104X	CAPACITOR	0.1µF,16V
C5044	NCF21CZ-105X	CAPACITOR	1µF,16V
C5045	NCB31EK-103X	CAPACITOR	0.01µF,25V
C5046	NBE70JM-107X	T CAPACITOR	100µF,6.3V
C5049	NCB31CK-104X	CAPACITOR	0.1µF,16V
L5001	NQL144K-101X	COIL	100µH
L5002	NQL144K-101X	COIL	100µH
L5003	NQL144K-101X	COIL	100µH
L5004	NQL164K-220X	COIL	22µH
L5005	NQL164K-220X	COIL	22µH
L5006	NQR0129-003X	FERRITE BEAD	
L5007	NQR0129-003X	FERRITE BEAD	
L5008	NQR0129-003X	FERRITE BEAD	
L5009	NQR0129-003X	FERRITE BEAD	
X5001	QAX0308-001X	CXO	
CN5001	NNZ0003-001X	CCD SOCKET	

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SENSOR BOARD ASSEMBLY <04>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW	YB10185A-01	SENSOR BOARD ASSY	
⚠ IC1601	AN3861SA	IC	
IC1602	XRA10324AF	IC	
	or BA10324AF	IC	
IC1651	BA6862FS	IC	
IC1701	BA6417F	IC	
IC3501	AN3352FHP	IC	
IC3502	TC7WU04FU	IC(DIGITAL)	
IC3503	MM1165ZM	IC	
Q1	CNB20010	IC(PHOTO SENSOR	
Q2	CNB20010	IC(PHOTO SENSOR	
Q3	PN207-/NCLF/VI	PHOTO TRANSISTOR	
Q4	PN207-/NCLF/VI	PHOTO TRANSISTOR	
Q3501	DTC144EE	TRANSISTOR	
Q3502	2SC4617/QR/-X	TRANSISTOR	
Q3503	2SA1577/QR/-X	TRANSISTOR	
Q3504	2SA1577/QR/-X	TRANSISTOR	
Q3505	DTC144EE	TRANSISTOR	
Q3506	2SC4617/RS/-X	TRANSISTOR	
Q3507	2SC4774(RS)	TRANSISTOR	
Q3508	2SC4617/RS/-X	TRANSISTOR	
Q3509	2SC4774(RS)	TRANSISTOR	
Q3510	2SC4774(RS)	TRANSISTOR	
Q3511	2SC4617/RS/-X	TRANSISTOR	
Q3512	2SC4774(RS)	TRANSISTOR	
Q3513	2SC4617/RS/-X	TRANSISTOR	
Q3514	2SC4617/QR/-X	TRANSISTOR	
Q3515	2SA1577/QR/-X	TRANSISTOR	
Q3516	2SA1577/QR/-X	TRANSISTOR	
Q3517	DTC144EE	TRANSISTOR	
Q3518	DTA144EE	TRANSISTOR	
Q3521	DTC144EE	TRANSISTOR	
Q3901	DTC144EE	TRANSISTOR	
Q3902	2SA1576/RS/-X	TRANSISTOR	
Q3903	2SA1576/RS/-X	TRANSISTOR	
D1	LN57-/LF/VI	LE DIODE	
D3502	DAP222	DIODE	
D3503	DAP222	DIODE	
D3504	DAN222	DIODE	
D3506	DAP222	DIODE	
R1601	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1602	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1603	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1604	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1605	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1606	NRV142F-R33X	CMF RESISTOR	0.33Ω,1/4W
R1607	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1608	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R1609	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R1610	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1651	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R1652	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R1653	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1654	NRSA63J-113X	MG RESISTOR	11kΩ,1/16W
R1655	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1656	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1657	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R1658	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1659	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1660	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1661	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R1662	NRS12BK-R68W	MG RESISTOR	0.68Ω,1/2W
R1701	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R1702	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R3501	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3502	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R3503	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3504	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3505	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R3506	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3508	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R3509	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R3519	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R3520	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3521	NRSA63J-100X	MG RESISTOR	10Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R3522	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3523	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3524	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3525	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R3526	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3527	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
R3528	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3529	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R3530	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3531	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3532	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3533	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3539	NESR63J-473X	MG RESISTOR	47kΩ,1/16W
R3542	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R3543	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
R3547	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R3554	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R3560	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
R3561	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R3902	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R3903	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R3904	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3905	NRSA63J-181X	MG RESISTOR	180Ω,1/16W
R3906	NRSA63J-150X	MG RESISTOR	15Ω,1/16W
C1601	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C1602	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C1603	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C1604	NCF21CZ-105X	CAPACITOR	1μF,16V
C1605	NCF21CZ-105X	CAPACITOR	1μF,16V
C1606	NCF21CZ-105X	CAPACITOR	1μF,16V
C1607	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1608	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1609	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1610	NDC31HJ-331X	CAPACITOR	330pF,50V
C1611	NCB31CK-473X	CAPACITOR	0.047μF,16V
C1612	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1613	NCF21CZ-105X	CAPACITOR	1μF,16V
C1615	NBE40JM-226X	T CAPACITOR	22μF,6.3V
C1616	NCB31CK-333X	CAPACITOR	0.033μF,16V
C1617	NBE21EM-474X	T CAPACITOR	0.47μF,25V
C1618	NDC31HJ-331X	CAPACITOR	330pF,50V
C1619	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C1620	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C1621	NDC31HJ-221X	CAPACITOR	220pF,50V
C1623	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1624	NCB31HK-102X	CAPACITOR	0.001μF,50V
C1625	NCB31EK-103X	CAPACITOR	0.01μF,25V
C1651	NCF21EZ-224X	CAPACITOR	0.22μF,25V
C1652	NCF21EZ-224X	CAPACITOR	0.22μF,25V
C1653	NCF21EZ-224X	CAPACITOR	0.22μF,25V
C1654	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1655	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1656	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1657	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1658	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1659	NCB31CK-104X	CAPACITOR	0.1μF,16V
C1660	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C1662	NBE20JM-106X	T CAPACITOR	10μF,6.3V
C1663	NBE20JM-475X	T CAPACITOR	4.7μF,6.3V
C1664	NCB31EK-223X	CAPACITOR	0.022μF,25V
C1665	NCB31EK-223X	CAPACITOR	0.022μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C1702	NCF21CZ-105X	CAPACITOR	1μF,16V
C3501	NCB31AK-224X	CAPACITOR	0.22μF,10V
C3502	NBE41AM-106X	T CAPACITOR	10μF,10V
C3503	NCB31EK-223X	CAPACITOR	0.022μF,25V
C3504	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3505	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3506	NCB21EK-683X	CAPACITOR	0.068μF,25V
C3507	NCF21CZ-105X	CAPACITOR	1μF,16V
C3508	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3509	NDC31HJ-680X	CAPACITOR	68pF,50V
C3510	NCF31AZ-105X	CAPACITOR	1μF,10V
C3511	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3512	NCF31AZ-105X	CAPACITOR	1μF,10V
C3513	NCF31AZ-105X	CAPACITOR	1μF,10V
C3515	NCF31AZ-105X	CAPACITOR	1μF,10V
C3516	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3518	NCF31AZ-105X	CAPACITOR	1μF,10V
C3519	NCF31AZ-105X	CAPACITOR	1μF,10V
C3520	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3522	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3523	NCF31AZ-105X	CAPACITOR	1μF,10V
C3525	NCF31AZ-105X	CAPACITOR	1μF,10V
C3526	NCF31AZ-105X	CAPACITOR	1μF,10V
C3527	NCB31EK-472X	CAPACITOR	0.0047μF,25V
C3528	NDC31HJ-820X	CAPACITOR	82pF,50V
C3529	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3530	NDC31HJ-221X	CAPACITOR	220pF,50V
C3531	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3532	NDC31HJ-470X	CAPACITOR	47pF,50V
C3533	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3534	NDC31HJ-221X	CAPACITOR	220pF,50V
C3535	NDC31HJ-470X	CAPACITOR	47pF,50V
C3536	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3537	NDC31HJ-221X	CAPACITOR	220pF,50V
C3538	NDC31HJ-470X	CAPACITOR	47pF,50V
C3539	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3540	NDC31HJ-221X	CAPACITOR	220pF,50V
C3541	NDC31HJ-470X	CAPACITOR	47pF,50V
C3542	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3543	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3544	NBE41AM-106X	T CAPACITOR	10μF,10V
C3545	NCF21CZ-105X	CAPACITOR	1μF,16V
C3546	NCF31AZ-105X	CAPACITOR	1μF,10V
C3547	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3548	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3549	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3550	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3551	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3552	NBE41AM-106X	T CAPACITOR	10μF,10V
C3553	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3554	NCF31AZ-105X	CAPACITOR	1μF,10V
C3555	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3556	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3557	NBE41AM-106X	T CAPACITOR	10μF,10V
C3558	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3559	NBE41AM-106X	T CAPACITOR	10μF,10V
C3560	NCB11CK-105X	CAPACITOR	1μF,16V
C3901	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3902	NCB31CK-104X	CAPACITOR	0.1μF,16V
C3903	NCB31EK-103X	CAPACITOR	0.01μF,25V
C3904	NDC31HJ-101X	CAPACITOR	100pF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C3905	NDC31HJ-151X	CAPACITOR	150pF,50V
C3906	NDC31HJ-270X	CAPACITOR	27pF,50V
L3501	NQL144K-470X	COIL	47µH
L3502	NQL144K-470X	COIL	47µH
L3503	NQL144K-470X	COIL	47µH
L3504	NQL144K-470X	COIL	47µH
L3901	NQL144K-221X	COIL	220µH
L3902	NQL184J-150X	COIL	15µH
SW1	NSW0037-001X	PUSH SWITCH	
SW2	NSW0036-001X	PUSH SWITCH	
SW3	NSW0036-001X	PUSH SWITCH	
HD1	LY40043-001B	HOLDER B/B	
CN1	PEMC1216-010-R	CONNECTOR	
CN2	QGF0501F1-06X	FPC CONNE	
CN3	PEMC1216-018-R	CONNECTOR	
CN4	YU41356-2-P	CONNECTOR	
CN5	QGF0502F2-20X	FPC CONNE	
CN6	PEMC1221-064-R	CONNECTOR	
SD1	LY40066-001A	SHIELD CASE	

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REAR BOARD ASSEMBLY <05>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW	YB20787A-01	REAR BOARD ASSY	
IC6001	MB3785APFV	IC	
Q6001	DTA144EE	TRANSISTOR	
Q6002	DTC114EE	TRANSISTOR	
Q6003	2SB1302/ST/-X	TRANSISTOR	
Q6007	MPL1	TRANSISTOR	
Q6008	2SC4081/S/-X	TRANSISTOR	
Q6009	DTA114EE	TRANSISTOR	
Q6010	DTC114EE	TRANSISTOR	
Q6011	2SB1121/TU/-X	TRANSISTOR	
Q6012	DTC144EE	TRANSISTOR	
Q6013	DTA144EE	TRANSISTOR	
Q6014	MPL1	TRANSISTOR	
Q6015	2SB1308/QR/-X	TRANSISTOR	
Q6016	DTC114EE	TRANSISTOR	
Q6201	2SB1308/QR/-X	TRANSISTOR	
Q6202	2SC4617/QRS/-X	TRANSISTOR	
Q6203	2SC4617/QR/-X	TRANSISTOR	
Q6204	2SB1308/QR/-X	TRANSISTOR	
Q6205	2SB1308/QR/-X	TRANSISTOR	
D6001	RB160L-40-X	SB DIODE	
D6002	DWA010	SB DIODE	
D6003	1SS355	DIODE	
R6001	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6002	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6003	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6004	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6006	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6007	NRVA63D-682X	CMF RESISTOR	6.8kΩ,1/16W
R6008	NRVA63D-823X	CMF RESISTOR	82kΩ,1/16W
R6009	NRVA63D-223X	CMF RESISTOR	22kΩ,1/16W
R6010	NRVA63D-512X	CMF RESISTOR	5.1kΩ,1/16W
R6011	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6012	NRVA63D-113X	CMF RESISTOR	11kΩ,1/16W
R6013	NRSA63J-274X	MG RESISTOR	270kΩ,1/16W
R6014	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6016	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6017	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6019	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6021	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6022	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6023	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R6024	NRSA63J-391X	MG RESISTOR	390Ω,1/16W
R6031	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6032	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6034	NRVA63D-303X	CMF RESISTOR	30kΩ,1/16W
R6035	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6040	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6041	NRVA63D-243X	CMF RESISTOR	24kΩ,1/16W
R6042	NRVA63D-332X	CMF RESISTOR	3.3kΩ,1/16W
R6043	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R6044	NRVA63D-273X	CMF RESISTOR	27kΩ,1/16W
R6045	NRVA63D-242X	CMF RESISTOR	2.4kΩ,1/16W
R6046	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R6048	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6049	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R6050	NRVA63D-473X	CMF RESISTOR	47kΩ,1/16W
R6051	NRVA63D-273X	CMF RESISTOR	27kΩ,1/16W
R6053	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6054	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6055	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
⚠ R6101	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6201	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6202	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6203	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6204	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R6205	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6206	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6207	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6208	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
C6001	NCB11CK-105X	CAPACITOR	1µF,16V
C6002	NCB11AK-225X-A	CAPACITOR	2.2µF,10V
C6005	NCB11CK-105X	CAPACITOR	1µF,16V
C6006	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6007	NCB11AK-225X-A	CAPACITOR	2.2µF,10V
C6012	NCS31HJ-561X	CAPACITOR	560pF,50V
C6013	NCB31HK-102X	CAPACITOR	0.001µF,50V
C6014	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6015	NCB31HK-472X	CAPACITOR	0.0047µF,50V
C6017	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6018	NCB21CK-224X	CAPACITOR	0.22µF,16V
C6019	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
C6021	NDC31HJ-431X	CAPACITOR	430pF,50V
C6022	NEA71CM-226X	E CAPACITOR	22µF,16V
C6023	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6024	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6026	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6027	NCB31CK-104X	CAPACITOR	0.1µF,16V
C6029	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6032	NCS31HJ-561X	CAPACITOR	560pF,50V
C6033	NCB31HK-102X	CAPACITOR	0.001µF,50V
C6034	NCB31EK-472X	CAPACITOR	0.0047µF,25V
C6035	NCB31EK-472X	CAPACITOR	0.0047µF,25V
C6036	NCB31EK-103X	CAPACITOR	0.01µF,25V
C6037	NCB31EK-223X	CAPACITOR	0.022µF,25V
C6038	NCB11AK-225X-A	CAPACITOR	2.2µF,10V
C6041	NDC31HJ-270X	CAPACITOR	27pF,50V

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C6043	NCB11CK-105X	CAPACITOR	1μF,16V
	C6044	NEA71CM-226X	E CAPACITOR	22μF,16V
	C6047	NCB11CK-105X	CAPACITOR	1μF,16V
	C6048	NCB11CK-105X	CAPACITOR	1μF,16V
	C6049	NCB31HK-152X	CAPACITOR	0.0015μF,50V
	C6050	NCB11CK-105X	CAPACITOR	1μF,16V
	C6051	NCB11CK-105X	CAPACITOR	1μF,16V
	C6052	NCB11CK-105X	CAPACITOR	1μF,16V
	C6053	NCB11CK-105X	CAPACITOR	1μF,16V
	C6056	NCB11CK-105X	CAPACITOR	1μF,16V
	C6057	NCB11AK-225X-A	CAPACITOR	2.2μF,10V
	C6059	NCB31HK-681X	CAPACITOR	680pF,50V
	C6060	NCB11CK-105X	CAPACITOR	1μF,16V
	C6061	NCB11CK-105X	CAPACITOR	1μF,16V
	C6101	NCB31EK-103X	CAPACITOR	0.01μF,25V
	C6201	NEA71CM-106X	E CAPACITOR	10μF,16V
	L6001	NQL17CM-100X	COIL	10μH
	L6002	NQL17CM-100X	COIL	10μH
	L6003	NQL17CM-220X	COIL	22μH
	L6004	NQL17CM-100X	COIL	10μH
	L6005	NQL17CM-220X	COIL	22μH
	L6006	NQL03BK-150X	COIL	15μH
	L6007	NQL164K-470X	COIL	47μH
	L6008	NQL164K-470X	COIL	47μH
	L6009	NQL17CM-390X	COIL	39μH
	L6010	PELN1217-220KY	COIL	22μH
	L6011	NQL03BK-220X	COIL	22μH
	SW6001	PESW0627	SLIDE SWITCH	
	T6001	NQS0002-001X	SW TRANSF	
⚠	J6001	YQ31344-2	BATT TERM UNIT	
	J6002	YQ32092-3	BATT TERM UNIT	
	CN601	ML-Y00784A	REG WIRE	
	CN602	QGF0502F1-08X	FPC CONNE	
	CN603	YU41356-2-P	CONNECTOR	
⚠	CP6001	ICP-S1.8-X	CIRCUIT PROTECTOR	
⚠	CP6002	ICP-S1.8-X	CIRCUIT PROTECTOR	
⚠	CP6003	ICP-S0.5-X	CIRCUIT PROTECTOR	

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MIC AMP BOARD ASSEMBLY <07>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB20788A-01	MICAMP BOARD ASSY,SZ7000EG	
		YB20788B-01	MICAMP BOARD ASSY,SZ5000EG	
	IC2201	BA7781K	IC	
	IC2351	MSM6372-114KR-X	IC,SZ7000EG	
	Q2204	2SC4617/QR/-X	TRANSISTOR	
	Q2205	2SC4617/QR/-X	TRANSISTOR	
	Q2206	2SC2412K(QR)	TRANSISTOR	
	Q2351	2SC4617/QR/-X	TRANSISTOR,SZ7000EG	
	Q2352	2SC4617/QR/-X	TRANSISTOR,SZ7000EG	
	Q2353	DTC144EE	TRANSISTOR,SZ7000EG	
	Q2354	2SC4617/QR/-X	TRANSISTOR,SZ7000EG	
	D2351	DA221	DIODE,SZ7000EG	
	D2352	DA221	DIODE,SZ7000EG	
	R2201	NRSA63J-122X	MG RESISTOR	1.2kΩ,1/16W
	R2202	NRSA63J-112X	MG RESISTOR	1.1kΩ,1/16W
	R2203	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R2204	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R2205	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R2206	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
	R2207	NRVA63D-822X	CMF RESISTOR	8.2kΩ,1/16W
	R2208	NRVA63D-822X	CMF RESISTOR	8.2kΩ,1/16W
	R2209	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
	R2210	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
	R2211	NRVA63D-822X	CMF RESISTOR	8.2kΩ,1/16W
	R2212	NRVA63D-822X	CMF RESISTOR	8.2kΩ,1/16W
	R2213	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
	R2214	NRVA63D-123X	CMF RESISTOR	12kΩ,1/16W
	R2215	NRVA63D-223X	CMF RESISTOR	22kΩ,1/16W
	R2216	NRVA63D-223X	CMF RESISTOR	22kΩ,1/16W
	R2217	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R2218	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R2219	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R2220	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R2221	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
	R2222	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
	R2225	NRSA63J-684X	MG RESISTOR	680kΩ,1/16W
	R2226	NRSA63J-684X	MG RESISTOR	680kΩ,1/16W
	R2231	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R2232	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R2234	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R2235	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R2237	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
	R2238	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
	R2239	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R2240	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
	R2243	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
	R2244	NRSA63J-392X	MG RESISTOR	3.9kΩ,1/16W
	R2245	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R2246	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R2247	NRSA63J-473X	MG RESISTOR,SZ7000EG	47kΩ,1/16W
	R2248	NRSA63J-473X	MG RESISTOR,SZ7000EG	47kΩ,1/16W
	R2249	NRSA63J-220X	MG RESISTOR	22Ω,1/16W
	R2251	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
	R2253	NRSA63J-820X	MG RESISTOR,SZ7000EG	82Ω,1/16W
	R2254	NRSA63J-820X	MG RESISTOR,SZ7000EG	82Ω,1/16W
	R2255	NRSA63J-820X	MG RESISTOR,SZ7000EG	82Ω,1/16W
	R2267	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R2351	NRSA63J-154X	MG RESISTOR,SZ7000EG	150kΩ,1/16W
	R2352	NRSA63J-153X	MG RESISTOR,SZ7000EG	15kΩ,1/16W
	R2353	NRSA63J-104X	MG RESISTOR,SZ7000EG	100kΩ,1/16W
	R2354	NRSA63J-224X	MG RESISTOR,SZ7000EG	220kΩ,1/16W
	R2355	NRSA63J-392X	MG RESISTOR,SZ7000EG	3.9kΩ,1/16W
	R2356	NRSA63J-104X	MG RESISTOR,SZ7000EG	100kΩ,1/16W
	R2357	NRSA63J-104X	MG RESISTOR,SZ7000EG	100kΩ,1/16W
	R2358	NRSA63J-823X	MG RESISTOR,SZ7000EG	82kΩ,1/16W
	R2359	NRSA63J-104X	MG RESISTOR,SZ7000EG	100kΩ,1/16W
	R2360	NRSA63J-182X	MG RESISTOR,SZ7000EG	1.8kΩ,1/16W
	R2361	NRSA63J-152X	MG RESISTOR,SZ7000EG	1.5kΩ,1/16W
	R2362	NRSA63J-102X	MG RESISTOR,SZ7000EG	1kΩ,1/16W
	R2363	NRSA63J-182X	MG RESISTOR,SZ7000EG	1.8kΩ,1/16W
	C2201	NCB31CK-333X	CAPACITOR	0.033μF,16V
	C2202	NCB31CK-393X	CAPACITOR	0.039μF,16V
	C2205	NCB31CK-333X	CAPACITOR	0.033μF,16V
	C2206	NCB31CK-333X	CAPACITOR	0.033μF,16V
	C2207	NCB31EK-153X	CAPACITOR	0.015μF,25V
	C2208	NCB31EK-153X	CAPACITOR	0.015μF,25V
	C2209	NBE20JM-106X	T CAPACITOR	10μF,6.3V
	C2212	NBE20JM-106X	T CAPACITOR	10μF,6.3V
	C2213	NCB31EK-223X	CAPACITOR	0.022μF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C2214	NCB31EK-223X	CAPACITOR	0.022μF,25V
C2215	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2216	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2217	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2218	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2219	NCB31EK-223X	CAPACITOR	0.022μF,25V
C2220	NCB31EK-223X	CAPACITOR	0.022μF,25V
C2221	NCB31HK-682X	CAPACITOR	0.0068μF,50V
C2222	NCB31HK-682X	CAPACITOR	0.0068μF,50V
C2223	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2224	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2225	NCB31CK-473X	CAPACITOR	0.047μF,16V
C2226	NCB31CK-473X	CAPACITOR	0.047μF,16V
C2227	NCB31CK-473X	CAPACITOR	0.047μF,16V
C2228	NCB31CK-473X	CAPACITOR	0.047μF,16V
C2229	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2230	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2231	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2232	NCB31CK-104X	CAPACITOR	0.1μF,16V
C2240	NCB31EK-223X	CAPACITOR	0.022μF,25V
C2243	NCB31EK-103X	CAPACITOR	0.01μF,25V
C2244	NCB11CK-105X	CAPACITOR	1μF,16V
C2245	NCB21EK-104X	CAPACITOR,SZ7000EG	0.1μF,25V
C2247	NEZ0012-476X	E CAPACITOR	47μF,5.5V
C2248	NEZ0012-476X	E CAPACITOR,SZ7000EG	47μF
C2259	NCB31CK-273X	CAPACITOR	0.027μF,16V
C2260	NCB31CK-273X	CAPACITOR	0.027μF,16V
C2261	NCF21CZ-105X	CAPACITOR	1μF,16V
C2262	NCF21CZ-105X	CAPACITOR	1μF,16V
C2351	NDC31HJ-101X	CAPACITOR,SZ7000EG	100pF,50V
C2352	NCF21CZ-105X	CAPACITOR,SZ7000EG	1μF,16V
C2353	NCB31CK-104X	CAPACITOR,SZ7000EG	0.1μF,16V
C2354	NCB31CK-104X	CAPACITOR,SZ7000EG	0.1μF,16V
C2355	NCB31EK-153X	CAPACITOR,SZ7000EG	0.015μF,25V
C2356	NCF21CZ-105X	CAPACITOR,SZ7000EG	1μF,16V
C2357	NCF21CZ-105X	CAPACITOR,SZ7000EG	1μF,16V
L2204	NQR0022-005X	FERRITE BEAD	
L2205	NQR0022-005X	FERRITE BEAD	
CN2201	YU41356-7-R	CONNECTOR	
CN2202	PEMC1073-005-R	CONNECTOR	

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OPERATION(CAMERA)BOARD ASSEMBLY <08>

PW	LY10018-009B	OPERATION(CAMERA)BOARD ASSY,SZ5000EG
	LY10018-010A	OPERATION(CAEMRA)BOARD ASSY,SZ7000EG

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OPERATION(DECK)BOARD ASSEMBLY <09>

PW	LY10001-001A	OPERATION(DECK)BOARD ASSY

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E.VF BOARD ASSEMBLY(SZ5000EG TYPE T) <10>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
PW	YB20748E-03	EVF BOARD ASSY	
IC7001	BA7149F-XE	IC	
Q7001	2SD968A(RS)	PH TRANSISTOR	
Q7002	2SA1748(QR)	PH TRANSISTOR	
Q7003	2SA1748(QR)	PH TRANSISTOR	
D7001	MA142WA	DIODE	
R7002	QRSA08J-3R9YN	RESISTOR	3.9Ω,1/10W
R7003	NRVA62D-183N	RESISTOR	18kΩ,1/16W
R7005	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R7006	QRSA08J-113YN	RESISTOR	11kΩ,1/10W
R7007	QRSA08J-330YN	RESISTOR	33Ω,1/10W
R7008	QRSA08J-394YN	RESISTOR	390kΩ,1/10W
R7009	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R7010	NRVA62D-104N	RESISTOR	100kΩ,1/16W
R7011	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R7012	QRSA08J-221YN	RESISTOR	220Ω,1/10W
R7013	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R7014	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R7015	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R7016	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
R7017	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R7018	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R7019	QRSA08J-120YN	RESISTOR	12Ω,1/10W
R7020	QRS188J-685YN	RESISTOR	6.8MΩ,1/8W
R7021	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
R7022	QRSA08J-475YN	RESISTOR	4.7MΩ,1/10W
R7023	QRSA08J-564YN	RESISTOR	560kΩ,1/10W
R7024	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
R7025	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
R7026	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
R7029	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R7030	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
VR7001	NVP0001-221X	V RESISTOR,V SIZE	
VR7002	NVP0001-225X	V RESISTOR,R BRIGHT	
VR7003	PERE0595-565	V RESISTOR,FOCUS	
C7001	QFV21HJ-104AZ	F CAPACITOR	0.1μF,50V
C7002	PECA1131-A107	E CAPACITOR	100μF,10V
C7003	PECA1131-A107	E CAPACITOR	100μF,10V
C7004	PECA1132-A107	E CAPACITOR	
C7005	NCF21CZ-105X	CAPACITOR	1μF,16V
C7006	QCYA1EK-153	CAPACITOR	0.015μF,25V
C7007	NCB11CK-105X	CAPACITOR	1μF,16V
C7008	NCF21CZ-105X	CAPACITOR	1μF,16V
C7009	PECA1131-A107	E CAPACITOR	100μF,10V
C7010	PECA1135-Y	CAPACITOR	5600pF,100V
C7011	QCTA1CH-180	CAPACITOR	18pF,16V
C7012	QEKC1HM-105	E CAPACITOR	1μF,50V
C7013	QCFA1HZ-104	CAPACITOR	0.1μF,50V
C7014	QCFA1HZ-104	CAPACITOR	0.1μF,50V
C7015	QCZ0136-151Z	CAPACITOR	150pF,1kV
C7016	PECA1133	CAPACITOR	330pF,500V
L7001	PELN1175	COIL	
L7002	PU49993-101	COIL	100μH
L7003	PELN1101-680JY	COIL	68μH
⚠ T7001	PELN1174	FB TRANS	
CN7001	PEMC0856-4	CONNECTOR	
CN7002	PEMC1004-006	CONNECTOR	
CN7003	PEMC1172	CONNECTOR	

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	

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UPPER DRUM BOARD <40>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YDM3068-7	BOARD (UPPER DRUM)	

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E.VF BOARD ASSEMBLY(TYPE M) <50>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YQ32236-600	E.VF BOARD ASSY	
	IC1	BA7149F	IC	
	Q1	2SA1037K	TRANSISTOR,TR1	
		or 2SA1179	TRANSISTOR,TR1	
		or 2SA1235	TRANSISTOR,TR1	
	Q2	2SC4132	TRANSISTOR,TR2	
	Q3	2SC4618	TRANSISTOR,TR3	
		or 2SC4655	TRANSISTOR,TR3	
	D1	RLS245	DIODE	
	R1	YQ31803-501	RESISTOR	9.1kΩ,1/10W
	R2	QRSA08G-333YN	RESISTOR	33kΩ,1/10W
	R3	QRSA08J-3R9YN	RESISTOR	3.9Ω,1/10W
	R4	QRSA08J-390YN	RESISTOR	39Ω,1/10W
	R5	YU30595-111	RESISTOR	390Ω,1/10W
	R6	YU30595-113	RESISTOR	91kΩ,1/10W
	R7	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R8	YQ31803-502	RESISTOR	2.2kΩ,1/10W
	R9	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	VR1	YQ31803-504	V RESISTOR,V SIZE	470Ω
	VR2	YQ31803-505	V RESISTOR,H HOLD	47kΩ
	VR4	YQ31803-506	V RESISTOR,BRIGHT	1MΩ
	R10	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	R11	QRSA08J-330YN	RESISTOR	33Ω,1/10W
	R12	QRSA08J-113YN	RESISTOR	11kΩ,1/10W
	R13	YQ31803-503	RESISTOR	3.9kΩ,1/10W
	R14	QRSA08J-822YN	RESISTOR	8.2kΩ,1/10W
	R15	QRSA08J-182YN	RESISTOR	1.8kΩ,1/10W
	R16	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
	R17	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	R18	QRSA08J-471YN	RESISTOR	470Ω,1/10W
	R19	QRSA08F-103YN	RESISTOR	10kΩ,1/10W
	R20	QRSA08F-152YN	RESISTOR	1.5kΩ,1/10W
	R21	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
	R22	QRSA08J-275YN	RESISTOR	2.7MΩ,1/10W
	R23	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R24	QRSA08J-154YN	RESISTOR	150kΩ,1/10W
	R25	QRSA08J-2R7YN	RESISTOR	2.7Ω,1/10W
	R26	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R27	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
	C1	YQ31803-507	CAPACITOR	0.22μF,16V
	C2	YQ31304-503	CAPACITOR	1μF,16V
	C3	YQ31304-504	CAPACITOR	1500pF,50V
	C4	YQ31304-503	CAPACITOR	1μF,16V
	C5	YQ31304-506	E CAPACITOR	100μF,10V
	C6	YQ31304-506	E CAPACITOR	100μF,10V
	C7	YQ31304-506	E CAPACITOR	100μF,10V
	C8	YQ31304-503	CAPACITOR	1μF,16V
	C9	YQ31392-501	CAPACITOR	100pF,16V
	C10	YU30531-163	CAPACITOR	0.047μF
	C11	QER61HM-100	E CAPACITOR	10pF,50V
	C12	YQ31803-508	F CAPACITOR	6200pF,100V
	C13	YQ31304-506	E CAPACITOR	100μF,10V
	C14	YQ31304-507	CAPACITOR	1500pF,630V
	L1	YQ30723-115	COIL	100μH
	TH1	YU30236-110	THERMISTOR	
	WR1	YQ32236-580	FPC	
⚠	FBT1	YQ31803-550	FLY BACK TRANS	
	HLC1	YQ31803-560	H.COIL	
	CN1	YQ31803-570	CONNECTOR	
	CN2	YQ31803-571	CONNECTOR	
	CN3	YQ31803-572	CONNECTOR	

SECTION 6
TECHNICAL INFORMATION

6.1 EMERGENCY DISPLAY

Whenever some abnormal signal is supplied to mechacon CPU, an error number (E 04, for example) displayed in the electronic view finder.

E. VF DISPLAY	Symptom	Mode when observed	Resulting mode
E07	Short circuit of capstan MDA	Power ON	Power OFF
E06	CAPSTAN FG input absent	EDIT	STOP
E04	DRUM FF input absent	DRUM rotation	STOP
E03	SUPPLY REEL FG input absent	REC, PLAY, SEARCH, FF	STOP
E02	Mode control motor rotates for more than 10 sec without shift to next mode.	UNLOADING	Mode continues
E01	Mode control motor rotates for more than 10 sec without shift to next mode.	UNLOADING	Mode continues
E00	Overtime the programming transaction	REC, PLAY	EJECT

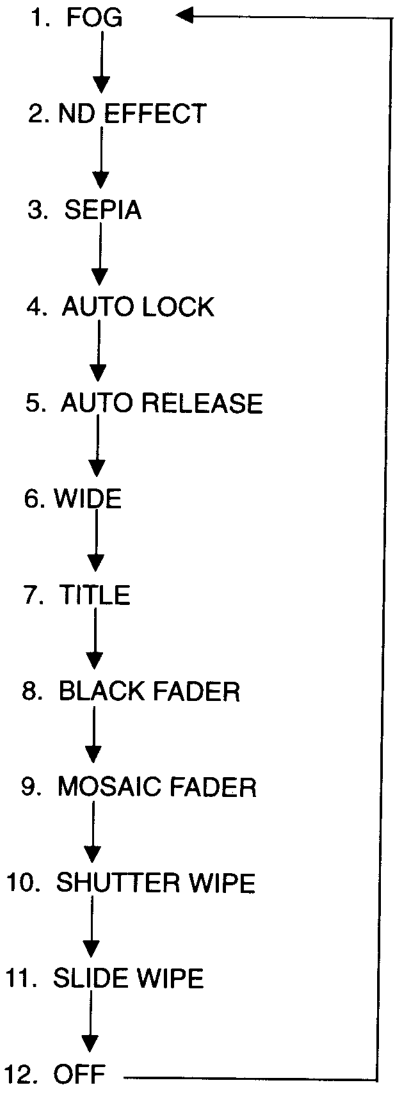
Emergency mode : Indication for 5 minutes, then power OFF
Port states : Same as Stop mode
Effective key : POWER
Shifted mode : Power OFF

6.2 DEMONSTRATION MODE

This model is equipped with the function to display P. AE/EFFECT operations partly in the monitor.

1) How to set DEMONSTRATION mode
   Without any cassette tape being loaded, set the program AE select dial to AUTO MODE RELEASE first, keep the STOP and MENU buttons down then set the POWER switch to the REC position.

GR-SZ5000E


1. FOG
2. ND EFFECT
3. SEPIA
4. AUTO LOCK
5. AUTO RELEASE
6. WIDE
7. TITLE
8. BLACK FADER
9. MOSAIC FADER
10. SHUTTER WIPE
11. SLIDE WIPE
12. OFF

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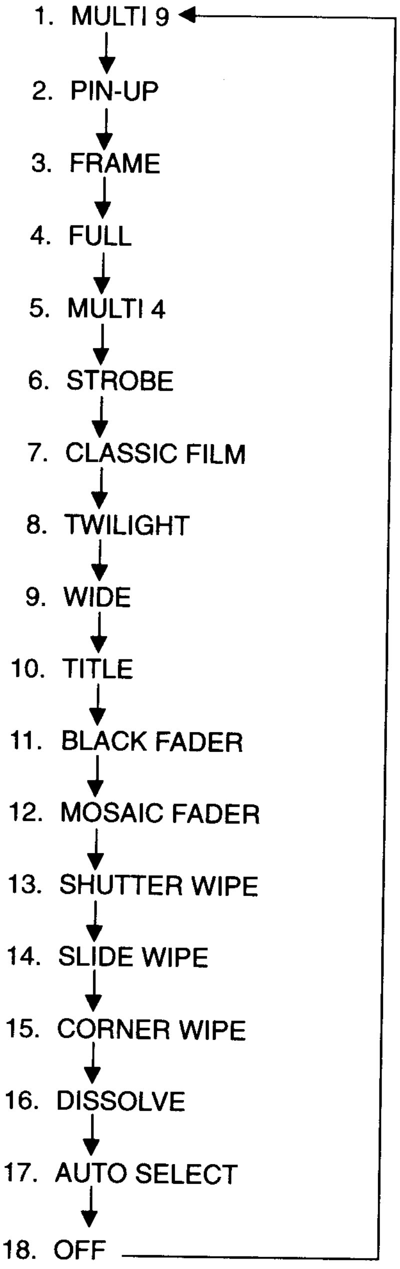
1. MULTI 9
2. PIN-UP
3. FRAME
4. FULL
5. MULTI 4
6. STROBE
7. CLASSIC FILM
8. TWILIGHT
9. WIDE
10. TITLE
11. BLACK FADER
12. MOSAIC FADER
13. SHUTTER WIPE
14. SLIDE WIPE
15. CORNER WIPE
16. DISSOLVE
17. AUTO SELECT
18. OFF

2) How to cancel DEMONSTRATION mode
   Set the POWER switch to the POWER OFF position and the DEMONSTRATION mode is cancelled.